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# Solar Power Investment under Uncertainty

A Real Option Approach

*Tom Duncan Sabel Douglas*

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*Sol lucet omnibus!*

# Abstract

In this thesis a real option model is adopted in order to evaluate the profitability and timing of investment in solar power generation in Sweden. Investment in solar power is viewed as a call option. The real option pricing model used in this research is based on a binomial framework with discrete time intervals, illustrating the evolution of the value of a potential investment for the installation of solar panels on a commercial rooftop. The empirical analysis in this thesis is built using price data from Statistics Sweden and case-study data provided by the Swedish solar power company Save-by-Solar Sweden AB. The evolution of the electricity price in Sweden is modeled as a stochastic process.

A sensitivity analysis concerning several crucial parameters is undertaken in order to investigate their impact on the considered investment project and draw conclusions about the investment potential under different economic scenarios. In this respect, variables considered are volatility, investment cost, discount rate and the level of subsidies supporting investment in solar power generation. The changed variables are the volatility, the investment cost, discount rate and the level of subsidies.

The results illustrate the importance of volatility in the electricity price, for the determination of project value and investment timing. The results have also implications for the definition of optimal subsidies for the stimulation of investment in solar power.

# Abbreviations

ADF – Augmented Dickey-Fuller test

CF – Cash Flows

EX.P – Exercise Price

mWh – Mega Watt Hour

NPV – Net Present Value

Prob. – Probability

PV – Project Value

RO – Real Optoion

SEK – Svenska enkronor (Swedish currency)

kWh – Kilo Watt Hour

R&D – Research and Development

RW – Random Walk

VAT – Value Added Tax

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# 1. INTRODUCTION

## 1.1 BACKGROUND

In recent years there has been a growing worldwide concern for climate changes caused mainly by global warming. Actions have been taken to restrict the emission of carbon dioxide through binding agreement like the Kyoto protocol and the recent negotiations in Paris organised by the UN:s climate panel IPCC. This in turn has created an increasing demand for renewable energy sources such as wind, hydro and solar. In Sweden hydro energy stands for about 42 % of the produced energy, wind power for about 6-7 % while solar only for a tiny fraction *(Elåret, 2014).* This is due to Sweden's low levels of insolation (Klimatindikator - globalstrålning, 2016) which make investments in solar panels not too profitable. This results in land being allocated to other more profitable activities like farming and constructions. In addition, Sweden have had relatively low energy prices during recent years which makes the alternative to buy electricity produced by other energy sources more attractive and investment in solar power less profitable. In contrast countries with higher levels of insolation and/or countries with higher energy prices have had and will typically have higher incentives to allocate land to the installation of solar panels for the production of solar energy (for the so-called farming).

Since it in most cases will be rational for a Swedish landowner to build houses or rent out the land to farmers since it will generate a greater value than to install solar panels the potential investor in solar panels would have to find alternative surfaces. In this respect rooftops may represent an interesting alternative. Rooftops generally don´t have any specific purpose other than providing a shelter. Moreover, rooftops are generally located well above land level and will therefore be less shadowed by trees etc. than would be the case for a land-levelled area. So to summarize, installing solar panels on rooftops could be a profitable investment opportunity for many property owners.

The profitability of such an investment would in turn depend on a number of different factors, of which some could be influenced by the investor and some that would be seemingly random and hard to forecast. Some of the factors that could be influenced by the specific investor are the position and inclination of the panels. These would typically be optimized by the engineers responsible for the installation and would therefore not be of any greater interest for this work. Although the most important of the factors that could be influenced by the investor is the size of the investment, in other words the number of solar panels. The investor could choose to invest in anything from zero panels to the maximum number of panels that would fit on the roof.

The size of the investment could have a crucial impact on the profitability of the project. Surplus energy produced will have to be transferred to the electric grid and sold in the market. The economic benefit from selling surplus energy could differ substantially depending on difference in market conditions. For instance, there is often a fee for using the grid and also a tax is levied on electricity sales. So if an investor don´t produce more electricity than he needs himself even during peak producing hours he will save the full alternative cost of buying electricity in the market (given that the marginal cost to produce solar energy is zero). But if the investor produces a surplus during certain periods with high production levels he will be able to sell this surplus energy at the market for the market price. But he will then have to pay a fee for using the grid and a tax, so he will be left with only a part of the market price. This may then make it relatively more profitable to invest in a facility that matches the demanded energy of the investor. This is of course the case only when there is not a minimum price guarantee from the government on green energy.

## 1.2 PROBLEM

The most commonly used method to evaluate investments in general and therefore also investments in solar power are the net present value (NPV) method. The NPV method is convenient to use as it is simply the value today of all future discounted cash flows subtracted with the cost of the initial investment. If this value is positive the investments expected return is positive and the rule of thumb should be to undertake the investment. When managers consider multiple investment the rule of thumb should in a similar manner be to undertake the combination of possible investments with the highest NPV.

Even though the NPV method is widely used and easy to apply to many investment decisions it also comes with some weaknesses. One is simply the difficulty to estimate future cash flows as these may change substantially due to market conditions or other factors that cannot be predicted by the investor. This will represent the risk that always will be associated with future cash flows. In many applications of the NPV method this problem is addressed by calculating NPV:s for several different outcomes. For instance, one NPV is calculated for the

expected and most likely outcome and then two more are calculated for the cases of unexpectedly good and bad outcomes respectively. This is likely a way by which one can provide a more solid analysis with the NPV method but to do an even better prediction of future cash flows probabilities for each potential future scenario will need to be estimated.
To address this problem the future cash flows can be viewed as a stochastic process that will follow a probability distribution (Hardaker et al., 2004). In such a way all the possible outcomes of the investment can be evaluated and the value of the investment can be better evaluated (Hardaker et al., 2004).

Other problems with the NPV method is the lack of flexibility and the choice of a proper discount rate. A NPV model doesn't allow for any managerial flexibility and the decision to invest or not is just applied to the specific moment in time that is being evaluated. So the NPV method ignores the option that the potential investor has to wait and gather more information and thus postpone the decision to invest. Concerning the discount rate there is also a lot of uncertainty to most investments of what to use as discount rate. Firstly, the risk-free rate could change substantially over time which can make it useful to use different predictions of the risk-free rate for investments in longer projects (this is possible with the NPV method). Further a risk-premium should also be included in the discount rate and as the investment project develops the risk profile may very well change. Therefore, the NPV model will reject investments that very well could turn out profitable in the future if the market conditions would change. In the same way it could also give positive NPV:s for projects that will not be profitable if things were to change in the wrong direction.

So to summarize there is a growing demand for green energy in most countries and in Sweden as well. Sweden´s low amounts of insolation and low energy prices have made it hard to get profitability in investments in solar panels as it would be more profitable to allocate land to housing or traditional farming. On many commercial rooftops there are however unexploited opportunities to install solar panels without giving up any existing income source. But in order for companies to use their option to install solar panels on their rooftops credible evaluations of the profitability in the investments must be done. For this purpose, a flexible model is needed and the frequently used NPV model mostly fails in this aspect. So therefore the purpose of this research is to develop a real option model for the evaluation of the possibility (option) to invest in solar panels on commercially owned rooftops in Sweden.

## 1.3 AIM

In this research I adopt a real option framework to construct a valuation model in order to determine the value of the option to install solar panels on commercial rooftops in Sweden. The research question in this work is:

*What factors determine the profitability of investing in solar panels on commercially owned rooftops in Sweden?*

The study also aims to:

- identify the impact of subsidies on the value of the option to invest,
- identify the crucial factors determining the profitability of an investment in solar panels,
- determine how the results from the model will differ from those given by a NPV model in a case study of a real investment in solar panels on a commercial rooftop,
- determine threshold levels for the electricity price that indicate at what levels it is worth investing.

## 1.4 OUTLINE

The remainder of this paper is organised in the following way. Section 2 gives an introduction to the theoretical perspective of real option analysis, and the necessary tools used for the formalization of the model used in this work. Part 2.1 provides a description of the conventional Net Present Value method and its shortcomings. 2.2 Provides a description of the fundamental theory of different types of real options. In part 2.3 the numerical method for binomial real option models is presented together with a derivation of the lognormal distribution. 2.4 Then goes through the derivation of the volatility and the theory behind the random walk and the unit root test. 2.5 Rounds of the section with a review of the literature used in this work.

Section 3 presents the method used in this work and starts with 3.1 that present the research methodology used and an introduction to the terms of internal- and external validity. 3.2 Describes the process used for the collection of empirical data and 3.3 present the choice of the case-study object.

In section 4 the empirical background is presented together with the results. Part 4.1 describes the case study. 4.2 Explains the elements of the electricity price. Part 4.3 goes through the calculations pertaining to the cash flows used in the study. The unit root tests and the calculation of the price volatility is performed in 4.4. Last the jump factors and the corresponding risk adjusted probabilities are calculated in part 4.5.

Section 5 provides analysis and discussion of the results. 5.1 Analyzes the results from the case-study and the impact on the result from changes in different parameters. In part 5.2 I discuss the internal and external validity of the study before 5.3 provides suggestions for future research.

Finally section 6 concludes the results from the work.

# 2. THEORETICAL PERSPECTIVE

## 2.1 TRADITIONAL ECONOMIC EVALUATION MODEL - NPV

### 2.1.1 What is NVP approach?

The net present value model is the most commonly used model for the evaluation of investment opportunities. The analysis undertaken by discounting all the future project cash flows back to the point in time on which the investment opportunity is considered. Then the initial cost of the project is determined. If this value is positive the investment should be undertaken and if negative it should not. The corresponding formula is as follows:

$$NPV = \sum_{i=t}^{T} \frac{CF}{(1+r)^t} - \mathrm{I}$$

Where I represent the initial cost paid by the investor, CF is the cash flows, r is the discount rate and T is the durations of the project. The use of the NPV model is extremely straightforward but the underlying approach has some weaknesses.

### 2.1.2 Shortfalls of the NVP analysis

#### 2.1.2.1 The Discount Factor

The rate at which the future cash flows should be discounted should be given by the risk free interest rate plus a premium accounting for the risk of the project. The risk free rate could usually be interpreted as the interest for government bonds having a duration comparable to the duration of the project. What may be harder to determine is the project risk premium associated with the project. The investor will have to analyze the market conditions and then make assumptions on how this will affect the profitability of the investment. For investments with long lifetime this can be a crucial aspect since there is a great chance that market conditions will change during the project lifetime and the discount rate that was first chosen may later result inaccurate.

#### 2.1.2.2 Managerial Flexibility

Managerial Flexibility represents the possibility that the manager have to adapt to changes in conditions affecting the investment. This could for instance be a change in the market price for the good produced once invested (e.g. potatoes being produced in the agricultural land one has invested in) that makes the investment non-profitable. The company should then consider the investment undertaken as a sunk cost and sell out the project assets at the highest price possible. As the NPV method emphasizes a ”now or never” approach with the investment being made at the point in time that is being accounted for in the calculations it doesn't allow for managers to postpone the investment and wait for the time where one should have optimally undertaken the project. So the NPV method only evaluates the investment on the basis of the current without properly taking to account to future changes in market conditions that may make investing later more convenient.

#### 2.1.2.3 Future Cash Flows

Future cash flows can also be hard to predict for the potential investor. A change in market conditions can again make the initial prediction of the future cash flows irrelevant and therefore invalidate the NPV evaluation of the project. In many cases the future cash flows depend on the market prices of output and input goods/services. Even though managers have information about current prices the future prices will be hard to estimate and can according to Hardaker et al. (2004) often be assumed to follow a stochastic process that follows a probability distribution. To just assume that prices will have a constant growth or even to be constant over time will therefore be a questionable assumption in most cases. Since future market prices and therefore the future profits of the project can take on an indefinite number of values at every period of time. Thus since the NPV method only evaluates one of these cases (or sometimes several when multiple calculations are done for e.g. the expected scenario and some alternative scenarios) it will be an incomplete analysis of potential future cash flows.

## 2.2 REAL OPTION APPROACH

### 2.2.1 What is a real option approach?

To adjust for the above illustrated weaknesses the possibility for a manager to invest can be viewed in the same way as a financial American call option. The manager can at any time choose to exercise the option and undertake the investment. In the same way as for financial options the manager has no obligation to exercise the option to invest. So if the conditions for the investment do not materialize (the strike price is above the price of the underlying asset for the case of financial options) the manager will not exercise the option. But since he is still holding the option he has not abandoned the possibility to undertake the investment later. Thus he may just decide to postpone the investment to a more suitable point in time. In this way the rational manager will look for the optimal timing to exercise the option as the value of the option will be higher when the value of the underlying asset (the project invested in) is higher. So in contrast to the NPV approach the manager here have the choice to wait and collect more information regarding the potential investment. He can in such a way reduce the uncertainty regarding the investment by for example waiting out particular events with crucial impact on the investment, like for instance government subsidies for solar energy for the investment problem examined in my project. So in contrast to a manager using a NPV method with a ”now or never” approach the manager using a ROA can take on more of a ”wait and see” perspective to evaluate the investment.

So being a more complete model than the NPV model where the investment is being undertaken or not based on what value it would generate if the future conditions would be in line with the information the manager has today the ROA approach will allow the manager to maximize the profitability of the investment along the way. This could be done in a number of ways of which some are:

### 2.2.2 Option to expand / reduce project

If the outcome of an investment project is uncertain the manager may customize the initial investment so that it later on may be adjusted to changes in market conditions. This would in financial terms be equal to investing in the underlying asset but also in a call option on some more of the underlying asset. For example, a property owner with a relatively low internal demand for electricity installing solar panels on his rooftop may choose not to use the entire roof and install the maximum possible amount of panels. In this way he will still hold the call option to expand the investment and install more panels if his demand for energy should grow in the future. But by doing this and keeping the option to expand the manager will in any case have some fixed costs that cannot be split on more units.

In contrast a manager having the possibility to reduce the scale of a project can be seen as holding the underlying asset (the investment already done in the project) and a put option on some of that asset. So in the case of bad prospects for the undertaken project he has the possibility to exercise this option and reduce the scale of the project. For instance, the manager may have the possibility to denounce a part of a rented facility. So if the demand for the product being produced in the facility falls the manager may exercise the option and reduce the project to a scale that matches demand. In such a way he may avoid losses related to an over scaled production. Knowing that he has this option to adjust the project to future conditions will also reduce the risk related to uncertain future conditions in the initial investment point. That will also increase the value in the project and increase the likelihood that he undertakes the investment.

### 2.2.3 Option to abandon project

Sometimes a project may turn out to be a complete failure, even if the initial prospect were positive. In case the project is actually generating negative cash flows it would be rational for the manager to abandon the project if possible. It would also be rational for the manager to abandon the project if the salvage value of the project invested is higher than the value of continuing the project as planned. So if the manager has the possibility to abandon his project and still receive a salvage value for the project this can be seen in financial terms as holding the underlying asset and a put option on those assets. The manager should therefore exercise the put option if the estimated expected value of continuing the project falls below the exercise price (salvage value) of the option to abandon.

### 2.2.4 Option to delay project

Since the possibility to invest in a certain project can be seen as holding an American call option on the underlying asset (the project) the manager will not only be interested in whether or not the value of the underlying asset is below or above the exercise price (the cost of undertaking the project). But he will also want to exercise the option when the value of the underlying asset is at its maximum. The manager thus have the option to delay the project and postpone his investment for a certain period of time. This could for instance be a case where the manager has the exclusive selling rights for a product in a specific country for 10 years. The manager will then wait until the best moment for releasing the product. Thus he will exercise the option when the underlying asset has the highest price (the price will be based on future cash flows and therefore maximize the value of the investment).

### 2.2.5 The choice of taking a real option approach

The aim of this work is to design a model that captures the different factors determining the value of the possibility investment in solar panels on a commercial rooftop. The four main characteristics determining the value of such an opportunity is the uncertainty of the electricity price, the flexibility available to the manager, possible future changes in technology affecting price and possible changes in future government policy. With a traditional NPV approach the manager would have no possibility to delay the project, thus he could only decide to invest or not. With a RO approach this flexibility can be incorporated into the model and in addition the uncertainty of the electricity prize can be modelled. Even though it is not within the scope of this project the uncertainties of technological change and policies could also be incorporated into a RO model. Thus when valuing investment opportunities where managerial flexibility and uncertainty in the underlying value are of vital importance the RO approach provides desirable features that conventional methods don´t. Thus the only disadvantage of the RO approach is that it is more tedious to conduct, although in this research the aim is not to fasten the valuation process but rather to improve it and to incorporate uncertainty and managerial flexibility. Therefore I have chosen a RO approach for valuing a potential solar panel investment in this work.

## 2.3 NUMERICAL METHODS OF THE REAL OPTIONS VALUATION

In order to quantify the above stated advantages of the RO approach a presentation of the theoretical foundations of options will be stated in this section and followed by a presentation of the binomial option pricing model. A binomial model will induce simplifications from reality such as decisions being made in discrete and not continuous time. For financial options this would in most cases be an oversimplification making the model as a trader of financial derivatives are continuously making decisions of whether or not to exercise an option depending on the value of the underlying asset. However in the case of potential installment of solar power a manager will not be considering the installment depending on the electricity price every other minute, most likely not even every day, week or month. An investment in solar power is more likely to be foregone by careful prospecting and negotiation before undertaking an investment. Once the final decision to invest is taken the installation of the solar panels will also take time and electricity will therefore not me generated immediately. Since an investment in solar power have this type of time-lag, exercise of the option to invest in solar power can reasonably be modelled in discrete time without too much loss of transparency.

The main theoretical perspective used in this work is the one presented by Copeland and Antikarov (2003) and later also used by Ashuri (2011).

### 2.3.1 The lognormal distribution

Since we in this work are dealing with uncertainty pertaining from changes in electricity prices we will assume that the percentage price changes, in time follow a normal distribution and therefore use a lognormal distribution as expressed below.

$$ln\left(\frac{p_{t+\Delta t}}{p_t}\right) = \mu\Delta t + \sigma\sqrt{\Delta t}Z \qquad (2.1)$$

Where:

$P_t$ - is the current electricity price.

$p_{t+\Delta t}$ – is the electricity price in the next period of time.

$\mu = \alpha - \frac{\sigma^2}{2}$ which is the mean logarithmic price change for one time period.

$\alpha$ – is the drift or the geometric mean of price changes for one time period.

$\sigma$ – is the standard deviation of the logarithmic price changes for one time period, or in other words the volatility of the price.

$Z$ – is a stochastic random variable with zero mean and standard deviation equal to one and is the standard normal variable that characterizes the increment of a Wiener process.

This model also assumes discrete time and uses the Wiener process which is a simplification of the continuous time Brownian motion. Thus since we in this work are using a binomial model that is in discrete time it should be clear that this is a simplification and only an approximation of the lognormal distribution process.

### 2.3.2 The binomial option pricing model

The fundamental concept of a binomial tree (lattice) is that for every discrete period of time that is used in the model the underlying value increase or decrease with the risk weighted probabilities $p$ and $1-p$ where $1 < p < 0$.

For the magnitude of the up and down movement will then in an arbitrage free world $u > r > d$ where $r$ is the risk free rate and $u$ and $d$ the magnitudes of the up and down movement steps respectively.

The formula for calculating the magnitude of the up and down movement steps together with this risk weighted probabilities is as given by Copeland and Antikarov (2003) expressed below.

Magnitude of the steps:

$$u = e^{\sigma^{\sqrt{t}}} \qquad \text{and} \qquad d = \frac{1}{u} \qquad (2.2), (2.3)$$

With the probabilities:

$$p^u = \frac{a-d}{u-d} \qquad \text{and} \qquad p^d = 1 - p^u \qquad (2.4), (2.5)$$

Given that:

$$a = e^{rt} \qquad (2.6)$$

Given the above stated equations for probabilities and movements the only required variables are the risk free rate *(r)*, the annual volatility *(σ)* and the number of discrete time intervals that each year is divided into *(t)*.
Moving in to more than one time period the value of the underlying will be equal to:

$$V_t = V_0(u^{t-n}) + v_0(d^n) = V_0(u^{t-n} + d^n) \qquad (2.7)$$

With probability:

$$P = (p^u)^{t-n} + (p^d)^n \qquad (2.8)$$

Given that $t$ is the total number of time periods at the given date and that n is the number of time periods in which the value has decreased.

Expressed in a more graphic way:

Figure 1.

| *t=0* | *t=1* | *t=2* | *t=3* |
|---|---|---|---|
| | | | $V_0(u^3)(p^3)$ |
| | | $V_0(u^2)(p^2)$ | |
| | $V_0(u)(p)$ | | $V_0(u^2*d)p^2(1-p)$ |
| $V_0$ | | $V_0(u*d)p(1-p)$ | |
| | $V_0(d)(1-p)$ | | $V_0(u*d^2)p(1-p)^2$ |
| | | $V_0(d^2)(1-p)^2$ | |
| | | | $V_0(d^3)(1-p)^3$ |

In the next step backward induction is used starting with the value of the underlying in the end nodes of the tree. For the end nodes we maximize between exercising the call option or not (thus never exercising the option), so the difference between the value of the underlying and the strike price or zero. Hence if the value of the underlying exceeds the strike price we will exercise the call option. If the strike price exceeds the value of the underlying we will not exercise and if they are equal, so that the value is zero we are indifferent between exercising or not.

Once this is done for all nodes at the end of the tree we work our way back, node by node maximizing between exercising the option (value of underlying – strike price) and the value of the option if kept until the next period in time (node). The value of keeping the option is calculated by multiplying the up and down nodes from the next time period with their risk adjusted probabilities and then discounting the value back to the current time period using the associated risk free rate. In this way the initial value of the option is calculated by maximizing between exercising the option immediately or holding it until the next period of time.

By doing this we also find the optimal exercise strategy, so that we find for what values of the underlying it will be worth exercising the option and at what levels it will be rational to take on a "wait and see" position.

Even though the above stated model uses nodes at discrete time intervals it will as the number if time intervals increase $(t \rightarrow \infty)$, approach the lognormal process. Therefore it will also in the limit converge to the standard normal distribution inherent in the Z component.

## 2.4 MEASURING VOLATILITY

In this RO analysis the only uncertainty determining the value of a potential investment in solar power comes from the pertaining cash flows which in this model are affected by only one source of uncertainty, changes in the electricity price. In this thesis the commonly used and widely accepted (not the least within option theory) standard deviation is used as a measure of volatility.

For estimating the future volatility of the energy price the historically volatility is used and a time series of monthly electricity prices is used to calculate historical standard deviation of the Swedish electricity price. This way the evolution of the electricity price can be viewed as a stochastic process.

An important characteristic of such a time-series is if it is stationary or not. Data that is characterised by stationarity will tend to return to a given mean which can be modelled using a mean-reversion model. A series that is characterised by non-stationarity will not revert to any given mean but can be modelled as a random walk. It is therefore important to look into these characteristics when modelling the uncertainty in a RO analysis.

### 2.4.1 Formalization of the random walk

The most basic form of a random walk process can be expressed using the variable $Y_t$ (electricity price) and a random factor $u_t$ representing random shocks affecting the value of the variable (could be weather conditions, demand etc.).

$$Y_t= Y_{t-}+ u_t \qquad (2.9)$$

Thus the future value of the variable will be the result of the starting value and the sum of the previously occurred shocks.

$$Y_t= Y_0+\sum u_t \qquad (2.10)$$

Interpreting the random walk as a Brownian motion (using a Wiener process), shocks in it is assumed to follow a normal distribution with zero mean and constant variance. Therefore the expected value of the variable will equal the initial value.

$$E(Y_t) = E(Y_0+\sum u_t)=Y_0 \quad \text{and} \quad Var(Y_t)= t\sigma^2 \qquad (2.11), (2.12)$$

This implies that the variance will increase over time and thus not be constant over time which would imply a non-stationary random walk.

Still following the process of a random walk there might also be a drift in the variable. To express this we add the variable $\delta$.

$$Y_t\text{-}Y_{t\text{-}1}=\Delta Y=\delta+u_t \qquad (2.13)$$

With this both the variance and the mean will in expected terms increase over time (given a positive $\delta$).

$$E(Y_t)=Y_0+ t\delta \qquad and \qquad var(Y_t)= t\sigma^2 \quad (2.14), (2.15)$$

In order to see if the random walk is stationary or non-stationary process we introduce the parameter p to the original model, so that.

$$Y_t=pY_{t\text{-}1}+u_t \qquad Where \quad -1\leq p \leq 1 \qquad (2.16)$$

With the parameter p added to the model we are able to check for a unit-root. In other words, if p takes the value 1 the expression becomes the initial expression of a random walk with no drift and is thus a non-stationary process. But if p does not equal 1 the random walk turns in to a stationary process. To check for stationarity we will in the next section perform a unit-root test.

### 2.4.1 Unit-root test

In order to be able to assume that our stochastic process is characterised by non-stationarity and model it accordingly we will need to perform a unit-root test. To begin with we use our previously presented expression (2.9) and subtract $Y_{t-1}$ from both sides so we have:

$$Y_t - Y_{t\text{-}1} = pY_{t\text{-}1} - Y_{t\text{-}1} + u_t = (p\text{-}1)Y_{t\text{-}1} + u_t \qquad (2.17)$$

*So if* $\varphi = (p - 1)$ *we have*

$$Y_t = \varphi Y_{t\text{-}1}+u_t \qquad (2.18)$$

Then our parameter of interest which in our null hypothesis will be stated to be equal to zero is $\varphi$ it´s values will have the following implications.

When $\varphi = 0$ we have $p = 1$ so we have a unit-root present which will indicate non-stationarity.

If $p < 1$ we have $\varphi < 0$ so the process is proved to be stationary.

To test this hypothesis the tau statistic ($\tau$) is used and three types of regressions are run.

Regressions:

$$\Delta Y_t = \varphi Y_{t-1} + u_{t.} \tag{2.19}$$

$$\Delta Y_t = b_1 + Y_{t-1} + u_{t.} \tag{2.20}$$

$$\Delta Y_t = b_1 + b_2 t + \varphi Y_{t-1} + a u_{t.} \tag{2.21}$$

So the first regression corresponds to the most basic formalization of the random walk while the second one is extended to include a drift and the final one consist of a drift around a stochastic trend and the usual error term. The hypothesis is then tested towards the τ-statistic of which some relevant values are stated below.

## 2.5 LITERATURE REWIEW

In this work the aim is to design a RO model for valuing the possibility to invest in solar panels on a commercial rooftop and to investigate which factors that are crucial for the decision to invest or not. A number of researchers have already performed studies that use a real option approach to value the possibility to invest in energy projects like solar panels.

Copeland and Antikarov (2003) provides introduction and guidance to understanding the theories of real options and how they can be used for decision makers to improve their decisions regarding whether or not to undertake investments or projects and when to undertake them. The authors use a binomial lattice for valuing different options and explains the theories of a replicating portfolio and risk-neutral probabilities. Moreover, basic instructions for how to use excel to construct a binomial lattice is given together with useful tips for how to estimate the volatility of the underlying project.

The book by Dixit and Pindyck (1994) provides a good complement and extension to the book by Copeland and Antikarov as it stresses the fact that many investments are characterised by irreversibility and an unpredictable economic environment which are crucial aspects of a decision making model. Just like Copeland and Antikarov they provide an option based approach that relates to options in the financial markets and provides a more complex decision making model as they take the complexity of making investment decisions under uncertainty further.

Gazheli and Di Corato (2013) addresses an issue that is quite similar to the one of my research. Firstly it also focuses on solar energy which makes the implications quite comparable. More importantly the article also focuses on the problems caused by uncertainty and irreversibility and uses an interesting real option model that account for these things in a much better way than a more traditional valuation model like NPV. They focus on the opportunities for farmers in Bologna, Italy to rent out land for a long time (20 years or more) to companies using the land for solar farming. They then set up a real option model assuming that the revenues from farming the land follow a geometrician Brownian motion. The model is then applied to a few regions in Bologna with different characteristics, for each region threshold levels for switching from farming to renting out the land are then calculated and important factors determining the decision to switch are identified.

The authors find that as uncertainty about future agricultural revenues grows the decision to invest is postponed. Moreover the research also finds that higher discount rates will cause earlier investments. For the case of the different regions on Bologna the article also finds thresholds for different contract lengths and discount rates.

In the article Real option versus Traditional Methods to assess Renewable Energy Projects (2014) Santos et al. focus on the problems that traditional evaluation methods faces with managerial flexibility, irreversibility and uncertainty. They then identify the pros and cons with a real option approach instead of a more traditional valuation method like NPV or IRR for evaluating an investment he authors apply a binomial tree real option valuation method to a case-study of a mini-hydro plant and compare the results with the results from a NPV evaluation. They find that with ROA it would be more profitable to postpone the investment and invest later than in the initial case as suggested by NPV. This also confirms the weakness in the ”now or never” approach implicitly taken by traditional methods such as the NPV and the authors stresses the importance of allowing for managerial flexibility in valuation models. The ROA also proves that there are substantial differences in the value of the investment when uncertainty is introduced. In general the authors find that ROA is a superior method to NPV and IRR when any or some of the characteristics uncertainty, managerial flexibility and irreversibility are factors determining the value of the potential investment.

Using a method very similar to the one used in this thesis Ashuri and Kashani (2011) design a decision-making model that assesses the risks pertaining to changes in energy prices, prices in solar panels, efficiency of solar panels and the risk pertaining to regulatory and policy risk for environmental issues to address the problem of whether to install solar panels on buildings or to make buildings “solar panel ready” so that panels easily can be installed later on. The authors use a real option model with a number of parameters. First they use a ”building energy simulation” component that is not described in detail but used to calculate the difference in energy performance for a solar power ready building when solar panels are installed compared to previous performance. This accounts for meteorological and micro climate effects related to environmental conditions. Next they use a stochastic model for modelling the retail energy price. They also use a binomial Lattice model to characterize the energy prices with the help of a Monte-Carlo simulation and thus are able to generate a large number of random energy prices throughout the entire investment horizon. This is then used to calculate how much could be saved by installing solar panels at different points in time and for different prices. Last the authors present the concept of the experience learning curve. The learning curve represents the fact that as the production of a certain product (like solar panels) increases the marginal cost of producing more units usually decreases. This is modelled by a power function $\boldsymbol{P_t} = \boldsymbol{P_0^{-\alpha}}$ so if *X=2* the marginal cost is reduced by $\boldsymbol{\alpha}$ for each doubling of the cumulative production. This can be due to R&D, economies of scale, learning by doing etc. and can be estimated using OLS or other methods. Lastly the authors make an illustrative example where the model is used to evaluate a solar building and a solar-ready building to estimate the differences.

Ashuri conclude that the RO- model proposes a wiser investment decision than conventional methods like the NPV model does. It also clarifies the hidden value in building a house that is prepared for an installation of solar panels so that an optimal time for installing them could be awaited instead of building a house with installed solar panels in the initial sequence. Using more flexible models like RO can also help effective investment in solar energy and thus in turn stimulate increased investments in solar energy.

# 3. METHOD

## 3.1 RESEARCH METHODOLOGY

Research is made with taking a specific philosophical approach. Generally this concerns the choice between positivism and hermeneutics. Positivism aims to view the world in an objective and quantitative way without putting human appraisal into observed results of the conducted research. In such a way the research aims to discover causal relationships or so called causal conjunctions and in that way detects the events or phenomenon that have a linkage.

A hermeneutic researcher do in contrast to a positivistic one try to answer the question "what do us see and what is the meaning of it? This way the hermeneutic try to see the world from the human eye and use interpretation as the main research method. The goal of the hermeneutic research is not to find the absolute truth but rather to study the methods we use for understanding. The primary target for hermeneutic research is also to understand value produced by the human mind such as literature, music etc. together with the context they are made or experienced in.

In this work a positivistic approach is mainly used as the focus lays in designing a model that should value and produce absolute results concerning whether or not to invest in solar panels. Although as most modern research this work contains both quantitative and qualitative elements. In the model setup a quantitative approach is used with data collected for electricity prices, subsidies, taxes, investment costs, interest rates etc. On the more qualitative side there is also a case-study conducted investigating a specific investment decision and the associated option value. Even though the calculations made in the case-study are being performed in a quantitative way there are still qualitative elements such as potentially subjective estimates of input variables etc.

When it comes to the validity of any research, this entails the consideration of both internal and external validity. The internal validity concerns the study itself and the results and conclusions made by the researcher. The validity of the results presented may be questioned for a number of reasons such invalid assumptions, questionable causality, choice of method etc. The external validity aims to interpret how far the results from a particular research project can be generalized to other similar objects or events. In this research, for instance the external validity of the results and conclusions from the case-study will have to be carefully evaluated with respect to the potential uniqueness of the case considered and other factors differentiating the case from general investments in solar panels on commercial rooftops.

## 3.2 COLLECTION OF EMPIRICAL DATA

As the price of electricity in this research the only stochastic in the model the most important data to collect was the data for monthly electricity prices. To begin with monthly consumer prices excluding taxes for companies being classified as “small industries” where collected from the Swedish energy authority and the statistics Sweden from April 2004 to February 2016. From November 2011 (when Sweden was divided into 4 electricity price areas) these prices are representing the price in electricity price area three (SE3), thus prices before November 2011 are representing the price for all of Sweden.

Historical energy taxes was then added on to make final consumer prices (VAT was ignored due to its deductibility), these were found for the years 2004-2011at websites for different energy companies such as, Fortum (year 2011), Best el (2012), Eon (2013), Billinge energi (2014), Energimarknadsbyrån (2015) and for the first two month of 2016 they were found at Svensk energi (2016). The last month (Feb 2016) was also used as the current electricity price after energy tax was added.

The other data used for investigating the case-study (installation costs, expected yearly generated kWh etc.) were collected from installation-prospection documents provided by the company under consideration. In the base case of the case-study the discount rate (4 %) used is equal to the one used by the company considered. This should make easier comparison with their prospects.

## 3.3 CHOICE OF CASE-STUDY OBJECT

The case study performed in order to apply the model to a real world scenario is developed in collaboration with the Uppsala based solar company “Save-by-Solar Sweden AB”. The choice was made considering that installing solar panels on the rooftops of commercial properties is the core business for this company.

Thus the business model of SB Solar goes perfectly in line with the research question of this study. In other words SB Solar benefits financially if the exact same put option as being valued in this study is exercised. Other competing solar companies have in some cases different business models were for example panels are rented out for a monthly or yearly fee. These business models would induce different types of cash flows that would not be so well in line with the ones modeled in this work

## 3.4 ETHICAL PERSPECTIVE

Appropriate valuation methods for renewable energy is of great importance for government officials evaluating the effect of potential new policies, but also for potential investors considering investment projects. Thus by providing a valuation model for investment in solar power this research aims to contribute to the existing literature pertaining to solar power investments. By contributing to the literature for solar power investments this work also aims to contribute to increased solar power investments in Sweden. The social benefits of solar power and renewable energy in general are their environmental advantages over conventional energy sources. What is still important for an investor to keep in mind when undertaking a solar power investment is the origin of the solar panels installed. According to the Guardian (13 Sep, 2010) many retailers and producers of solar panels are seen as unethical for a number of different reasons such as poor conditions for workers producing the solar panels or the selling company being linked to arm trade in other parts of the world. Therefore this thesis exhort all potential investors on solar power to carefully examine the origin of the considered solar panels and thereafter keep an ethical perspective in mind when investing.

# 4. EMPIRICAL BACKGROUND AND RESULTS

## 4.1 DESCRIPTION OF THE OBJECT OF CASE STUDY

Save by Solar Sweden AB was established in 2014 by two former engineering, business and economics students in Uppsala, Sweden. The company does not officially disclose the structure of shareholders but it is known that a number of private investors other than the founders hold shares of the company.

The company operates in the Swedish market for installation and maintenance of solar cells with focus on commercial buildings. The company offers a full service with everything from prospection including financial analysis and technical solutions to installation and maintenance of the panels through their entire life time. In addition the company also offers a number of add on services such as charging posts for electric cars to visualization technologies that can provide real time data on the efficiency and production of the solar cells.

Although SB Solar is still in the startup phase a number of prospections (and installations) have already been made. This thesis will have a closer look at one of them, the bath house Fjärran Höjderbadet in the town of Gävle. The bath house is a large building with a 1200 $m^2$ roof capable of hosting 1130.68 $m^2$ of solar panels, approximately capable of producing 142 906 $m^2$ of solar energy each year, supplying the bath house with 8 % of its needed energy. Since the bath house operates during day-time most of its electricity demand coincide with the peak production hours of the solar panels, this results in that the bath house can use all the produced energy so that no electricity will be sold through the grid.

The offer from SB Solar is an installation of 1130.68 $m^2$ solar panels with a guaranteed life time of 25 years to a cost of 1 843 140 SEK. According to financial analysis provided by SB Solar the system would have a payback-time of 12 years given a discount rate of 4 % which would also give the potential investment a NPV of 2 975 000 SEK.

## 4.2 ELEMENTS OF THE CONSUMER ELECTRICITY PRICE

The economic benefit from investing in solar panels will be equal to the value of the electricity that the producer does not need to buy plus the value of the electricity that can be sold on the market (or by a bilateral agreement). Although in this research we assume that the producer is consuming all of the produced electricity and therefore none of the produced electricity is sold. The benefit will thus be the quantity of electricity produced times the price that the producer should have payed if buying the electricity from a supplier (the consumer price). The consumer price consists of a number of different parts which are explained below.

### 4.2.1 Spot price

In Sweden electricity in traded on the day-ahead market called Nord Pool spot where sellers and buyers from the Nordic and Baltic countries make bids with specific quantities and prices for every hour of the upcoming day. A price for every hour is then set so that demand equals supply and trades are made. Due to limited transmission capacities between different areas of the Nord Pool market the market is divided into a number of electricity price areas of which Sweden contains four. So when the demand in a specific area is higher than the production in that area plus the maximum possible import from other areas the spot price will be higher in this area than in areas that are being net-exporters of electricity. In this work the electricity price of SE3 is used (Sweden electricity area 3) since Nord Pool uses it as the representative price for Sweden. The case study conducted will therefore also a case of a potential investment of solar panels on a commercial rooftop located in SE3 (nordpoolspot, 2016).

Since the spot price solely depends on supply and demand (and in some cases the transmission capacity) the spot price fluctuates with shifts in demand and supply that may occur from changes in weather, performance of energy intense industries etc. The spot price will therefore be the greatest source of volatility in the consumer electricity price.

### 4.2.1 Markup

A supplier that has purchased electricity on Nord Pool spot will have a markup on the price when selling the electricity to the consumer. This markup varies with different retailers and types of contracts but typically it only constitutes a small part of the consumer price.

### 4.2.2 Green-certificates

The system of green certificates is used in Sweden since 2003 and the market for trading the certificates was merged with the Norwegian market in 2012. The idea of the system is to create an additional economic initiative to produce green energy (energimyndigheten, 2016). The system works in the following way. The supply is created by giving producers of renewable energy (solar, wind etc.) a certificate for every mWh they are producing. The demand comes from that users that produce their own electricity *(>60 mWh / year)*, electricity intense industries, users that have bought their electricity directly over Elspot and suppliers of electricity are given a quota obligation and therefore are obligated to buy a certain amount of certificates depending on the level of their consumption and-/ or sales. Certificates are then traded on a market and money is thus transferred from conventional electricity producers to renewable energy producers. The government could thus adjust the quantity of the quota obligations given and in such a way adjust market demand for certificates. In that way incentives for renewable energy could be in-/decreased. A producer of solar energy will thus benefit financially from selling certificates but will also (given that the production is *>60 mWh*) need to buy a number of certificates, or more precise keep a number of the certificates received. However the potential net gain-/loss will need to be accounted for when evaluating the cash flows from a solar investment. To introduce this into the model, the current price for certificates will be divided by 1000 (changing mWh price to kWh price) and then added to the calculated gain of the non-purchased electricity. Noteworthy is also that a producer will only receive certificates for 15 years after the facility have started generating electricity.

### 4.2.3 Certificate fee

As explained in the above section suppliers of electricity and producers that consume their own produced electricity are obliged to buy a quota of certificates based on their production-/selling volume from producers of renewable energy (energimyndigheten, 2016). This fee will thus be added to the consumer price and typically it only constitutes a small part of the consumer price, typically between *0.02 and 0.03 SEK* (Larsson, 2016).

### 4.2.4 Grid fee

When buying electricity the consumer do not only need to pay for the electricity itself but also for using the grid delivering the electricity. This is payed to the network company and is divided into two parts. The first part is a subscription fee and the second part is a fee for every kWh delivered to the consumer through the grid. A potential investor in solar panels that would still need to buy some electricity delivered through the grid even with installed solar panels would thus still need to pay the same subscription fee and therefore only benefit from the saved the fees that would be charged for every kWh delivered through the grid if installing solar panels and produce his own electricity.

### 4.2.5 Energy tax

The Energy tax is an excise tax on electricity and some fuels that is regulated by the Swedish government every year. The energy tax is also an absolute tax and not a percentage tax, so the Swedish government decide a tax per kWh that is not dependent on the electricity price. This tax is not considered a value added tax and will therefore not be deductible for companies, thus the energy tax is added directly to the consumer price.

### 4.2.6 Tax reduction

So called micro producers (fuse < *100* ampere) are entitled to a tax reduction of *0, 60 SEK/kWh* for the net electricity they are transferring to the grid on a yearly basis. So if a micro producer transfers *10 000 kWh* to the grid a given year and in the same year buys *5 000 kWh* on the market (so transferred to him by the grid) he will be entitled to a tax reduction of *0, 60 * (10 000 – 5 000) = 3000 SEK.*

### 4.2.7 Vat

Value added tax is added on the final price (after electricity tax is added, so the consumer pays tax on the tax) and the standard VAT rate is used *(25%)* (ekonomifakta, 2016). Although in this work as the potential investment is not considered for private houses but for commercial rooftops the investment would thus be made by a company and the VAT would therefore be deductible and can therefore also be ignored in the following calculations.

## 4.3 CASH FLOWS

If all the power produced is used by the owner of the solar cells no real cash flows will occur in the sense that no monetary exchanges will that place. In this case the positive “cash flows” pertaining from such an investment will instead come from the money saved for the electricity that does not have to be bought thanks to the investment in solar panels. The potential annual cash flows generated will thus be equal to the amount of energy produced multiplied by the price that the investor would have to pay for buying the same amount of energy.

In the case of Fjärran Höjderbadet the money saved for each kWh produced would thus equal the spot price, the markup, certificate fees, grid fees and energy taxes plus the revenues gained from selling green certificates. Since the fuse of Fjärran Höjderbadet exceeds 100 ampere they are not entitled to a tax reduction and as earlier mentioned the deductibility of the VAT for companies makes it irrelevant for further analysis.

As of February 2016 the current electricity price for small industries (the category in which Fjärran Höjderbadet should be placed) were 0.68 SEK including certificate fees and energy tax. The average price of green certificates in February 2016 was 145 SEK (SKM, 2016) which would give a contribution to the cash flow gained of (145 / 1000) 0,145 SEK per kWh. The potential first year cash flow for Fjärran Höjderbadet if using the February price would thus be *(0.68+0.145)142 906 =117 897.45 SEK.* The potential cash flows gained in the following years would then be calculated in a similar manner using the relevant price and discounting back using an appropriate discount rate (in our base case 4 % as SB Solar uses).

## 4.4 THE UNIT ROOT TEST & THE VOLATILITY

### 4.4.1 The unit root

As assumed in the derivation of the real option model the price of electricity and therefore implicitly also the cash flows generated from a potential investment follows the Brownian motion and are therefore modeled to follow a random walk. As a random walk is characterized as a non-stationary time series a unit root test was made to check for the non-stationary in the time series.

The ADF test for a unit root was made using the EViews statistical software and the three regressions presented in the theoretical presentation of the random walk were run using the natural logarithm of the 143 observations in addition a test for auto regression of order one was also made (full regression results can be found in appendix 8.1), the results are presented in table 1 below.

Table 1.

| *ADF-test* | *No constant* | *Constant* | *Constant & trend* |
|---|---|---|---|
| *t-statistic* | *0.100420* | *-3.198221* | *-3.156005* |
| *p-value* | *0.7129* | *0.0221* | *0.0977* |

The critical values that the t-statistics are to be tested against according to the Dickey-Fuller distribution are calculated by EViews and presented below.

Table 2.

| Critical values for T level of significance | | | |
|---|---|---|---|
| 143 obs | No constant | Constant | Constant & trend |
| 0,01 | -2.581466 | -3.477144 | -4.024452 |
| 0,05 | -1.943107 | -2.881978 | -3.442006 |
| 0,1 | -1.615210 | -2.577747 | -3.145608 |

The null hypothesis is then rejected if $t_{value} < t_{critical}$ so in the most basic form we cannot reject the null hypothesis and find a unit root even at the one percent level. For the version extended with a constant we reject the null hypothesis at the 5 and 10 percent levels but not at the one percent level. In the last and most extended version we do not reject the null at the one or five percent level but do reject at the ten percent level. Thus at the one percent level we cannot reject null hypothesis of a unit root.

Similar results are given by the p-values where the value for the basic version is very high whilst the values for the other two versions are significantly lower but also higher for the version with both trend and constant than for the one with just a constant. The results from the auto correlation test further confirmed that the time series process of electricity prices has the character of a non-stationary random walk.

### 4.4.2 The volatility

We have monthly electricity price data for the 143 months from April 2004 to February 2016 and want to have the annual standard deviation. So first we calculate the average monthly standard deviation by using the natural logarithm of our energy prices using equation:

$$\sigma_{monthly} = \sqrt{\frac{\Sigma(\ln(p_t)-\ln(\bar{p}))^2}{(n-1)}} = 0.192606$$

Where n is the total number of observations, $\ln(p_t)$ is the natural logarithm of the monthly electricity price and $\ln(\bar{p})$ is the average of the logarithmic monthly prices.

Transforming it into annual standard deviation we use:

$$\sigma_{annual} = \sqrt{\frac{\sum(\ln(p_t)-\ln(\bar{p}))^2}{(n-1)}} * \sqrt{12} = 0.192606 * 3,464102 = 0.667206 \approx 66.72\ \%$$

So we find that the annual volatility measured as standard deviation of the natural logarithm of the electricity price is 66.72 percent

## 4.5 STEP FACTORS & RISK-NEUTRAL PROBABILITIES

Now that we have the volatility we can go on and find our up- and downside factors together with their risk-neutral probabilities. We start with finding the upside movement for annual steps using:

$$U = e^{(\sigma_{annual} * \sqrt{t})} = e^{(0{,}6672 * \sqrt{1/1})} = 1.94877311$$

Next we find the downside movement:

$$D = \frac{1}{U} = \frac{1}{1{,}94877311} = 0.51314337$$

Moving on to probabilities we start with calculating the factor *a:*

$$a = e^{rt} = e^{0{,}04*(\frac{1}{1})} = 1.040810774$$

Then finding the risk-neutral probability for up and down-movement:

$$p^u = \frac{a-d}{u-d} = \frac{1.040810774 - 0.51314337}{1.94877311 - 0.51314337} = 0.36755118$$

And:

$$p^d = 1 - p^u = 1 - 0.36755118 = 0.63244882$$

Now that we have performed calculations of the above parameters we have all the necessary input parameters to create our binomial for the electricity price using the commonly used software Excel. Thereby we can calculate potential cash flows for every year and in such a way calculate the option value and find the optimal exercise strategy. This will we presented and analyzed in the next section.

# 5. ANALYSIS & DISCUSSION

The aim of this study was to design a RO model for valuation of investment in solar power and by that identify the factors determining the vale of a potential investment in solar power on a commercial rooftop and to answer the following questions:

* Identify the impact of subsidies on the value of the option to invest
* Identify the crucial factors determining the profitability of an investment in solar panels.
* Determine how the results from the model will differ from those given by a NPV model in a case study of a real investment in solar panels on a commercial rooftop.
* Determine threshold levels for the electricity price that indicate at what levels it is worth investing.

## 5.1 THE CASE-STUDY

### 5.1.1 The base case scenario

From the results relative to the base case scenario, were we remind that *4 %* discount rate, i.e. the same rate adopted by SB Solar for the composition of their financial prospects, and a volatility of the electricity price in Sweden measured as standard deviation equal to *66.72 %* are used, we find that the value of the call option to invest in the installation of solar panels on the bath house roof, hypothetically held by the managers Fjärran Höjderbadet, is worth *363 907 SEK,* at $t = 0$. The strike price assumed is equal to the investment cost and is equal to *1 843 140 SEK*, the expiration is instead set within a 20-year horizon. We also find that the earliest scenario where the project has a positive net present value, i.e. discounted future cash flows exceeds the installation cost occurs when the price increases in the first two years so that the price of electricity is equal to *2.598 SEK /kWh.*

Regarding the managerial flexibility and the optimal exercise strategy the result from this case analysis is that it would only be rational for the manager to exercise the call option and install solar panels in the last period, right before the date set for the expiration. This is not necessary always the case as the option may not be worth exercise in some cases. In other words, there is no possible scenario where we will have an installation done before the year 2036. Further on, the threshold price for whether installment will take place at all or not is *2.598 SEK /kWh*. So once the price falls to levels where there is no possibility that the price will raise above the threshold level again, by the expiration date, the option value is null, we will not exercise the option.

The economic consequences for the organisation Fjärran Höjderbadet is that there is a positive value from holding the call option to install solar panels on the roof. With this said it is not profitable to invest at the current electricity price and the manager should adopt a “wait and see” strategy. In other words the managers should not in any case exercise the option and invest before the maturity of the option (2036). It follows that the investment should only be undertaken if the electricity price is *≥ 2.598 SEK /kWh*. This investment strategy could be compared to a conventional NPV calculation using the current price, that gives a NPV of *-85 499.57* and the investment would thus not be undertaken. Taking a “now or never” approach we would therefore dismiss the investment in solar power and neglect the value of having a roof with the possibility of hosting solar cells.

### 5.1.2 The volatility

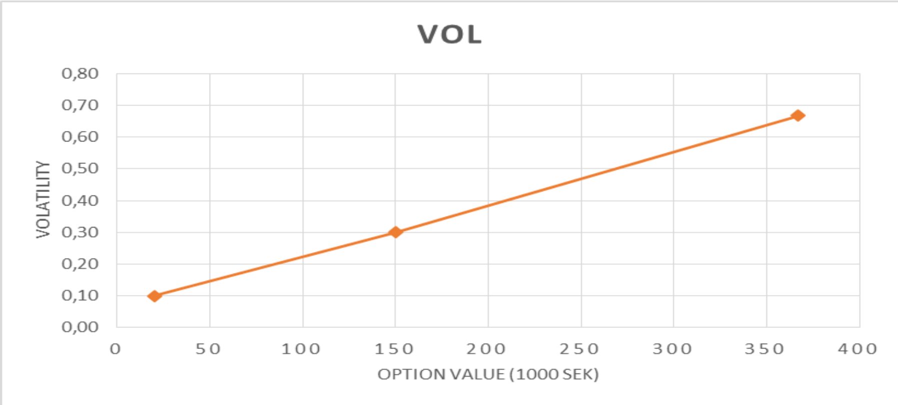
It is well known that the volatility has a relevant impact when it comes to i) the exercise of options and ii) the quantification of option value. Therefore, in order to provide a sensitivity analysis focusing on the impact of this specific parameter, the base case scenario is modified allowing for a scenario where we have a 30 % volatility and another where we have 10 % volatility. The results are summarized in table 3.

Table 3.

| **Volatility** | ***66,72%*** | ***30%*** | ***10%*** |
|---|---|---|---|
| *Option value t=0 (SEK)* | *363 907* | *145 234* | *15 110* |
| *Optimal exercise strategy* | *last period* | *last period* | *last period* |
| *1:st possible positive project-value* | 2018 | 2021 | 2028 |

The most obvious conclusion that can be drawn from the above presented results is that the option value is increasing in line with the volatility. This is in line with conventional call option theory, as the call option in this case study is out of the money at $t = 0$ and we would not exercise the option if the electricity price remains the same. That is with *volatility = 0* the option would be worthless as we would know for sure already from that start that it will never be profitable to exercise the option. But as volatility increases the potential changes in electricity price are wider and this increases the value of the underlying asset, i.e., the value of the investment project thus the possibility that the option will be in the money in a future period by its maturity increases.

Figure 2.




This also goes along with the result presented for when the first possible project value occurs in the analysis. For the base case with volatility of 66.72 % it is sufficient for the price to move upwards the first two years for the project value to become positive. For lower volatility levels, the potential increase or decrease in the value of the underlying asset are smaller. We note in fact that with a 30 % volatility, a sequence of five consecutive upward movements is needed for having a price securing, in expected terms, profitable investment. For the case with 10 % volatility the case is even more extreme and the electricity price should keep rising for at least twelve years before having the conditions such that the investment is profitable. Finally, discussing the actual optimal exercise strategy, we conclude that, irrespectively of the volatility level, the managers holding the option to invest will maximize expected profit by holding it up to the last period, i.e. 2036, where they will then verify if conditions for the investment have materialized.

### 5.1.3 The risk-free rate

The risk-free rate has an important role in the evaluation of a call option. First the rate is used to calculate the present value of cash flows. Second, in the binomial real option model, the risk-free rate also has a function in the calculation of the up- and down movement steps. This since it characterizes the long-term up movement in general prices (inflation) (Copeland & Antikarov, 2004). Therefore, it also indirectly affects the risk weighted probabilities. Thus it is interesting to see how a change in the risk-free rate affects our results. Two simulations have then been run using a 2 % rate and a 6 % rate. The results are summarized in table 4.

Table 4.

| Risk-free rate | *2%* | *4%* | *6%* |
|---|---|---|---|
| *Option value t=0 (SEK)* | *343 645* | *363 907* | *387 678* |
| *Optimal exercise strategy* | *last period* | *last period* | *last period* |
| *1:st possible positive project-value* | *2018* | *2018* | *2018* |

It is clear that the risk-free rate in this case does not have a large impact on the optimal exercise strategy or the year at which a potential investment in solar panels starts turning profitable for Fjärran Höjderbadet. The option value however increases with the interest rate. This is in line with option theory as the value of a call will be higher the more likely the underlying asset is to increase. Thus since the risk-free rate also affects the underlying general price movement a higher risk-free rate will induce a more positive price trend and thus also increase the likelihood that the value of the underlying will increase and therefore that the call will be in the money, on, or before the expiration date. Therefore the option value of the call will also be higher with a higher risk-free rate (Copeland & Antikarov, 2003).

### 5.1.4 The exercise price

The investment cost to be paid for installing, the solar panels is crucial for the profitability of the investment. The investment cost is often subject to negotiations and bargaining, it is therefore interesting to see the impact of allowing for a 15 %, 30 % and 45 % discount on the investment cost. Note that a lower investment cost may not only be the result of price negotiations but may also be due to the presence of a subsidy received for investing in solar panels covering a part of the installation cost. The results are summarized in table 5.

Table 5.

| Investment cost | *0%* | *-15%* | *-30%* | *-45%* |
|---|---|---|---|---|
| *Option value t=0 (SEK)* | *363 907* | *373 268* | *382 629* | *391 990* |
| *Optimal exercise strategy* | *last period* | *last period* | *last period* | *last period* |
| *1:st possible positive project-value* | *2018* | *2018* | *2018* | *2 017* |

First of all it can be found that the optimal exercise strategy is still “wait and see”. The potential exercise will only occur in the last period and is in line with the previous results presented above. This is due to the fact that the value of holding the option is greater than the value of exercising it. That is the sum of the potential values in the next period weighted by their risk adjusted probabilities and discounted by the discount rate is greater than the value of the option if exercised now. As this is the case in all time periods during the option lifespan exercise will only take place in the last period where the choice is between the value of exercising today and the value of letting the option expire *(0)*. Still, even in the last period exercise will only take place for positive project values.

This is linked to another interesting element illustrated by the results. Even though the discount is as big as 45 %, equivalent to *0.45* 1843140.0 = 829 413 SEK,* the impact on the option value is *391 990- 363 907 = 28 083 SEK*. This large difference is due to the fact that the investment would be likely undertaken after 20 years. Thus it is not only the probability of the investment actually taking place that affects the difference between the subsidy/discount and the increase in option value, but also the time value. So in other words the discount rate for 20 years heavily reduces the effect of the subsidy/discount on the option value. If, however the optimal exercise strategy would have been different and exercise of the option would have been optimal at an earlier stage, then the impact of the subsidy/discount on the option value would have been larger.

Finally it can also be concluded that only the biggest discount of *45 %* has an effect on when in time the potential project turns profitable (2017), so with a *45 %* discount it is sufficient with only one upward movement (36.7 % prob.) given status quo, for the project value to be positive.

### 5.1.5 Subsidies

The current subsidy given to producers of renewable energy in Sweden is in the form green certificates (see section 4.2.2) that are sold in a market where the demand for the certificates is controlled by the Swedish government through the use of a quotas system. Thus It is possible for the Swedish government to increase (decrease) the quotas required for energy producers and suppliers and in such a way increase (decrease) the demand for certificates, which in turn will induce higher (lower) certificate prices and as a consequence increase (decrease) the subsidy implicitly paid to agents investing in renewable energy sources. Therefore we will look in to the effect revenue associated with the green certificates by considering 3 potential scenarios, namely a scenario with no subsidy, a second scenario where the revenue is doubled and a third where the revenue is 3.5 times the one currently available. Since the subsidy received in the base case equals *0.145 SEK/kWh* the levels considered in our simulations will be *0.0 SEK/kWh, 0.29 SEK/kWh and 0.508 SEK/kWh*. Our results are summarized in table 6.

Table 6.

| **Subsidy level** | ***0.0 SEK*** | ***0.145 SEK*** | ***0.29 SEK*** | ***0.508 SEK*** |
|---|---|---|---|---|
| *Option value t=0 (SEK)* | *359 722* | *363 907* | *371 708* | *383 409* |
| *Optimal exercise strategy* | *last period* | *last period* | *last period* | *last period* |
| *1:st possible positive project-value* | *2019* | *2018* | *2018* | *2018* |

The first thing we can conclude is that the higher subsidy the option value of the option to invest. The reason for this is straightforward. A higher subsidy gives higher cash flows and then a higher value is associated with the underlying investment project. A negative result, from the perspective of a policymaker whose aim is to increase/foster investment in renewable energy, is that increased subsidies are not inducing earlier investment in our case study, i.e. Fjärran Höjderbadet. The optimal exercise strategy will thus still be i) “wait” until the last period and ii) exercise the option if “in the money”. Thus a higher subsidy does not boost investment in solar panels and does not induce earlier exercise of the option to invest held by Fjärran Höjderbadet.

Looking at what year we have the first possible project value we see that removing the subsidy would delay it one year. This may have interesting interpretations as this is the actual time at which (if price movements are up until that time) undertaking the investment, neglecting option value considerations, would have a positive project value. Thus, for managers adopting a simple Net Present Value approach, investing would make sense if this specific scenario materializes. However, this is not the case in our case study where earlier investment will not occur even allowing for a subsidy as high as *250 %* higher than today´s.

## 5.2 VALIDITY

### 5.2.1 Internal validity

There are some threats to the internal validity of this study, of which the main one is the assumption of a 25 years lifetime for the solar cells. 25 years are the time that is guaranteed by SB Solar for the panels to be efficient. Although the expected lifetime is up to 35-years (with reduced efficiency after 25 years), this would change the value of the option and possibly also have an effect on the optimal exercise strategy and the project value. However since the last ten years of the 35 years lifespan is not guaranteed in anyway this assumption was made to assure that the results of the analysis only rely on what the investor is guaranteed.

Other possible threats to the internal validity of this study come from the input variables such as the expected generated kWh/year and the assumption of zero maintenance cost (maintenance being fully included in the investment cost). This information is fully collected from external sources that have not been validated in any way and could therefore be subject to error or bias.

### 5.2.2 External validity

The external validity of the analyzed results produced for the case Fjärran Höjderbadet in this study are subject to a number of threats pertaining from the efficiency of the panels and the insolation at the current area, so the number of kWh produced each year. There could also be substantial differences in investment costs for different types of installations taking place at different areas. That is, there is little from the results in this case study that can be generalized to solar power investment on commercial rooftops in Sweden, and even less that can be generalized globally, since in addition to earlier mentioned factors, subsidies and taxes will also differ between countries.

Taking this into account the model can still easily be applied to other investment decisions regarding solar power investment on commercial rooftops. For the model to be applied to similar investment opportunities in Sweden only input parameters such as the estimated produced kWh/year, the investment cost and the life of the option would need to be adjusted to the case in question. So the model itself has a high external validity and can easily be generalized to other cases than the one conducted in this work.

## 5.3 POSSIBLE ASPECTS OF FUTURE STUDIES

There are many possible aspects for related future research, the model made in this work consist only of yearly steps and since the insolation in Sweden is highly seasonal it is possible that a model using monthly or weekly steps would provide more precise results and perhaps also provide a useful optimal exercise strategy that incorporates the intra year timing of an optimal investment decision.

Further it would also be interesting to incorporate the uncertainty pertaining to green certificates, especially since their double effect. If the government for instance increase the quotas required, demand will increase and renewable energy sources will receive a bigger subsidy. In addition, all energy suppliers/producers will need to buy more certificates at a higher price, thus energy bought at the market will have a higher price. Therefore, the cash flows coming from an investment in solar power will benefit in double ways, both from higher revenues from sold certificates but also from the higher price that they would have had to pay if their produced energy had to be bought in the market.

# 6. CONCLUSIONS

The main aim of this study was the adoption of a real option valuation model to be used in order to identify the factors determining the value of the option to install solar panels on commercial rooftops in Sweden.

A real option approach is used in order to overcome the well-known limits of the NPV approach, in particular when it comes to value associated with managerial flexibility. The case-study considered concerns the installment of solar panels on a bath house rooftop in Gävle. The results illustrates that uncertainty in the electricity price have a great impact on the value of the (call-like) option to install solar cells. In line with the literature, the higher volatility of the electricity price the higher the value of the investment project.

Other results are also consistent with the real option theory. Concerning the optimal exercise timing strategy in our case study, the main conclusion is that irrespective of changes in volatility, discount rate, subsidies and investment cost, it is always optimal, when profitable, to exercise the investment option in the last period before the call option expiration. The threshold, expressed in terms of electricity price, triggering investment is equal to *2.598 SEK /kWh.*

The effect of an induced reduction in the investment cost on the value of the option to invest in solar energy is, in line with general option theory positive. As it can be expected a lower investment cost also induce positive project values at earlier stages. This is due to the fact that lower investment costs will be rapidly covered by cash flows generated from lower electricity prices. From the analysis it is also clear that, in line with the theory, the value of the investment option is increasing with the discount rate. As a higher risk-free rate will induce a stronger positive price trend, the likelihood that the call will be in the money before expiration date increases and, as a consequence, also the value of the call option.

In Sweden, the current subsidies for renewable energy are mainly based on green certificates. This study shows that the certificates are currently not sufficient to create the conditions for profitable investments in solar power on commercial rooftops. The certificates do however induce positive project values at earlier stages if compared with a scenario without certificates. The analysis also shows that an increase in subsidies, implemented setting higher price for the green certificates, would not induce earlier optimal exercise or significantly earlier positive project values. Increased subsidies would therefore not be effective to boost investment in solar power by inducing earlier exercise of the option to invest in solar power. They do however increase the value of the option to invest in solar power on commercial rooftops.

This dissertation has, by applying a real option model for the evaluation of the underlying option to invest, studied the crucial factors affecting the investment for the installation of solar panels on commercial rooftops in Sweden.

The conclusions are in line with previous studies and find that the volatility, the exercise price and the risk-free rate are of crucial importance for the value of the call option. This dissertation also concludes that the use of real options in comparison with a NPV approach significantly increases the value of the option to invest in solar power on a commercial rooftop. Finally this Dissertation concludes that increased subsidies for renewable energy would have only a limited effect on the timing of investment in solar power.

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## 7.4 Personal Comments

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# 8. APPENDICES

## 8.1 Unit root tests

**INTERCEPT**

Null Hypothesis: LN_PRICE has a unit root
Exogenous: Constant
Lag Length: 1 (Fixed)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -3.198221 | 0.0221 |
| Test critical values: | 1% level | -3.477144 | |
| | 5% level | -2.881978 | |
| | 10% level | -2.577747 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LN_PRICE)
Method: Least Squares
Date: 05/27/16 Time: 16:49
Sample (adjusted): 3 143
Included observations: 141 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LN_PRICE(-1) | -0.140281 | 0.043862 | -3.198221 | 0.0017 |
| D(LN_PRICE(-1)) | -0.011066 | 0.086014 | -0.128656 | 0.8978 |
| C | 0.594165 | 0.185336 | 3.205890 | 0.0017 |

| | | | |
|---|---|---|---|
| R-squared | 0.074777 | Mean dependent var | 0.001969 |
| Adjusted R-squared | 0.061368 | S.D. dependent var | 0.099949 |
| S.E. of regression | 0.096834 | Akaike info criterion | -1.810600 |
| Sum squared resid | 1.293989 | Schwarz criterion | -1.747860 |
| Log likelihood | 130.6473 | Hannan-Quinn criter. | -1.785104 |
| F-statistic | 5.576583 | Durbin-Watson stat | 1.969766 |
| Prob(F-statistic) | 0.004688 | | |

**INTERCEPT AND TREND**

Null Hypothesis: LN_PRICE has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Fixed)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | -3.156005 | 0.0977 |
| Test critical values: | 1% level | -4.024452 | |
| | 5% level | -3.442006 | |
| | 10% level | -3.145608 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LN_PRICE)
Method: Least Squares
Date: 05/27/16 Time: 16:50
Sample (adjusted): 3 143
Included observations: 141 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LN_PRICE(-1) | -0.139639 | 0.044246 | -3.156005 | 0.0020 |
| D(LN_PRICE(-1)) | -0.012094 | 0.086618 | -0.139623 | 0.8892 |
| C | 0.593547 | 0.186047 | 3.190307 | 0.0018 |
| @TREND("1") | -2.90E-05 | 0.000202 | -0.143245 | 0.8863 |

| | | | |
|---|---|---|---|
| R-squared | 0.074915 | Mean dependent var | 0.001969 |
| Adjusted R-squared | 0.054658 | S.D. dependent var | 0.099949 |
| S.E. of regression | 0.097179 | Akaike info criterion | -1.796565 |
| Sum squared resid | 1.293796 | Schwarz criterion | -1.712912 |
| Log likelihood | 130.6578 | Hannan-Quinn criter. | -1.762571 |
| F-statistic | 3.698175 | Durbin-Watson stat | 1.969312 |
| Prob(F-statistic) | 0.013422 | | |

**WITHOUT INTERCEPT AND TREND**

Null Hypothesis: LN_PRICE has a unit root
Exogenous: None
Lag Length: 1 (Fixed)

| | | t-Statistic | Prob.* |
|---|---|---|---|
| Augmented Dickey-Fuller test statistic | | 0.100420 | 0.7129 |
| Test critical values: | 1% level | -2.581466 | |
| | 5% level | -1.943107 | |
| | 10% level | -1.615210 | |

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(LN_PRICE)
Method: Least Squares
Date: 05/27/16 Time: 16:50
Sample (adjusted): 3 143
Included observations: 141 after adjustments

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LN_PRICE(-1) | 0.000200 | 0.001993 | 0.100420 | 0.9202 |
| D(LN_PRICE(-1)) | -0.080120 | 0.086007 | -0.931552 | 0.3532 |

| | | | |
|---|---|---|---|
| R-squared | 0.005869 | Mean dependent var | 0.001969 |
| Adjusted R-squared | -0.001283 | S.D. dependent var | 0.099949 |
| S.E. of regression | 0.100013 | Akaike info criterion | -1.752951 |
| Sum squared resid | 1.390361 | Schwarz criterion | -1.711124 |
| Log likelihood | 125.5830 | Hannan-Quinn criter. | -1.735954 |
| Durbin-Watson stat | 1.970517 | | |

**ESTIMATED AR(1) without intercept which shows that it is a RW.**
Dependent Variable: LN_PRICE
Method: Least Squares
Date: 05/27/16 Time: 16:51
Sample (adjusted): 2 143
Included observations: 142 after adjustments
Convergence achieved after 2 iterations

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| AR(1) | 1.000149 | 0.001979 | 505.3564 | 0.0000 |

| | | | |
|---|---|---|---|
| R-squared | 0.730964 | Mean dependent var | 4.221514 |
| Adjusted R-squared | 0.730964 | S.D. dependent var | 0.192059 |
| S.E. of regression | 0.099619 | Akaike info criterion | -1.767918 |
| Sum squared resid | 1.399266 | Schwarz criterion | -1.747102 |
| Log likelihood | 126.5222 | Hannan-Quinn criter. | -1.759459 |
| Durbin-Watson stat | 2.121427 | | |

| | |
|---|---|
| Inverted AR Roots | 1.00 |
| | Estimated AR process is nonstationary |

8.2 Monthly prices

| date | nom P | nom P + tax | LN P | Y-Ybar | Ybar^2 | date | nom P | nom P + tax | LN P | Y-Ybar | Ybar^2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 april 2004 | 28,5 | 52,6 | 4,0 | -0,3 | 0,06626 | 1 mars 2010 | 66,1 | 94,1 | 4,5 | 0,3 | 0,10540 |
| 1 maj 2004 | 27,7 | 51,8 | 3,9 | -0,3 | 0,07386 | 1 april 2010 | 51,1 | 79,1 | 4,4 | 0,2 | 0,02280 |
| 1 juni 2004 | 31,8 | 55,9 | 4,0 | -0,2 | 0,03847 | 1 maj 2010 | 46,7 | 74,7 | 4,3 | 0,1 | 0,00879 |
| 1 juli 2004 | 26,5 | 50,6 | 3,9 | -0,3 | 0,08747 | 1 juni 2010 | 48,4 | 76,4 | 4,3 | 0,1 | 0,01352 |
| 1 aug 2004 | 32,8 | 56,9 | 4,0 | -0,2 | 0,03183 | 1 juli 2010 | 51,5 | 79,5 | 4,4 | 0,2 | 0,02435 |
| 1 sep 2004 | 28,8 | 52,9 | 4,0 | -0,3 | 0,06315 | 1 aug 2010 | 48,6 | 76,6 | 4,3 | 0,1 | 0,01414 |
| 1 okt 2004 | 26,6 | 50,7 | 3,9 | -0,3 | 0,08630 | 1 sep 2010 | 55,1 | 83,1 | 4,4 | 0,2 | 0,04014 |
| 1 nov 2004 | 28,2 | 52,3 | 4,0 | -0,3 | 0,06901 | 1 okt 2010 | 55,3 | 83,3 | 4,4 | 0,2 | 0,04111 |
| 1 dec 2004 | 25,6 | 49,7 | 3,9 | -0,3 | 0,09841 | 1 nov 2010 | 60,4 | 88,4 | 4,5 | 0,3 | 0,06873 |
| 1 jan 2005 | 23,6 | 49,0 | 3,9 | -0,3 | 0,10751 | 1 dec 2010 | 91,3 | 119,3 | 4,8 | 0,6 | 0,31578 |
| 1 feb 2005 | 25,8 | 51,2 | 3,9 | -0,3 | 0,08063 | 1 jan 2011 | 70,1 | 98,4 | 4,6 | 0,4 | 0,13641 |
| 1 mars 2005 | 30,7 | 56,1 | 4,0 | -0,2 | 0,03708 | 1 feb 2011 | 64,5 | 92,8 | 4,5 | 0,3 | 0,09656 |
| 1 april 2005 | 30,9 | 56,3 | 4,0 | -0,2 | 0,03572 | 1 mars 2011 | 63,8 | 92,1 | 4,5 | 0,3 | 0,09191 |
| 1 maj 2005 | 31,4 | 56,8 | 4,0 | -0,2 | 0,03246 | 1 april 2011 | 55,4 | 83,7 | 4,4 | 0,2 | 0,04307 |
| 1 juni 2005 | 27,3 | 52,7 | 4,0 | -0,3 | 0,06507 | 1 maj 2011 | 56,0 | 84,3 | 4,4 | 0,2 | 0,04609 |
| 1 juli 2005 | 30,0 | 55,4 | 4,0 | -0,2 | 0,04207 | 1 juni 2011 | 51,3 | 79,6 | 4,4 | 0,2 | 0,02475 |
| 1 aug 2005 | 31,7 | 57,1 | 4,0 | -0,2 | 0,03059 | 1 juli 2011 | 43,3 | 71,6 | 4,3 | 0,1 | 0,00264 |
| 1 sep 2005 | 30,1 | 55,5 | 4,0 | -0,2 | 0,04134 | 1 aug 2011 | 45,7 | 74,0 | 4,3 | 0,1 | 0,00712 |
| 1 okt 2005 | 33,0 | 58,4 | 4,1 | -0,2 | 0,02322 | 1 sep 2011 | 36,2 | 64,5 | 4,2 | -0,1 | 0,00281 |
| 1 nov 2005 | 32,1 | 57,5 | 4,1 | -0,2 | 0,02820 | 1 okt 2011 | 34,8 | 63,1 | 4,1 | -0,1 | 0,00562 |
| 1 dec 2005 | 35,9 | 61,3 | 4,1 | -0,1 | 0,01080 | 1 nov1 2011 | 48,5 | 76,8 | 4,3 | 0,1 | 0,01476 |
| 1 jan 2006 | 39,8 | 65,9 | 4,2 | 0,0 | 0,00100 | 1 dec 2011 | 37,7 | 66,0 | 4,2 | 0,0 | 0,00090 |
| 1 feb 2006 | 43,2 | 69,3 | 4,2 | 0,0 | 0,00035 | 1 jan 2012 | 40,9 | 69,9 | 4,2 | 0,0 | 0,00075 |
| 1 mars 2006 | 51,7 | 77,8 | 4,4 | 0,1 | 0,01807 | 1 feb 2012 | 54,7 | 83,7 | 4,4 | 0,2 | 0,04307 |
| 1 april 2006 | 48,4 | 74,5 | 4,3 | 0,1 | 0,00830 | 1 mars 2012 | 32,6 | 61,6 | 4,1 | -0,1 | 0,00981 |
| 1 maj 2006 | 35,5 | 61,6 | 4,1 | -0,1 | 0,00981 | 1 april 2012 | 34,5 | 63,5 | 4,2 | -0,1 | 0,00471 |
| 1 juni 2006 | 44,4 | 70,5 | 4,3 | 0,0 | 0,00129 | 1 maj 2012 | 34,0 | 63,0 | 4,1 | -0,1 | 0,00586 |
| 1 juli 2006 | 47,8 | 73,9 | 4,3 | 0,1 | 0,00689 | 1 juni 2012 | 32,5 | 61,5 | 4,1 | -0,1 | 0,01013 |
| 1 aug 2006 | 64,5 | 90,6 | 4,5 | 0,3 | 0,08223 | 1 juli 2012 | 19,3 | 48,3 | 3,9 | -0,3 | 0,11715 |
| 1 sep 2006 | 62,8 | 88,9 | 4,5 | 0,3 | 0,07172 | 1 aug 2012 | 29,2 | 58,2 | 4,1 | -0,2 | 0,02428 |
| 1 okt 2006 | 50,1 | 76,2 | 4,3 | 0,1 | 0,01292 | 1 sep 2012 | 31,7 | 60,7 | 4,1 | -0,1 | 0,01294 |
| 1 nov 2006 | 44,9 | 71 | 4,3 | 0,0 | 0,00185 | 1 okt 2012 | 36,8 | 65,8 | 4,2 | 0,0 | 0,00109 |
| 1 dec 2006 | 31,8 | 57,9 | 4,1 | -0,2 | 0,02592 | 1 nov 2012 | 35,9 | 64,9 | 4,2 | 0,0 | 0,00220 |
| 1 jan 2007 | 30,7 | 57,2 | 4,0 | -0,2 | 0,02998 | 1 dec 2012 | 45,7 | 74,7 | 4,3 | 0,1 | 0,00879 |
| 1 feb 2007 | 33,5 | 60,0 | 4,1 | -0,1 | 0,01571 | 1 jan 2013 | 43,7 | 73,0 | 4,3 | 0,1 | 0,00501 |
| 1 mars 2007 | 27,8 | 54,3 | 4,0 | -0,2 | 0,05070 | 1 feb 2013 | 40,1 | 69,4 | 4,2 | 0,0 | 0,00041 |
| 1 april 2007 | 26,4 | 52,9 | 4,0 | -0,3 | 0,06315 | 1 mars 2013 | 43,6 | 72,9 | 4,3 | 0,1 | 0,00481 |
| 1 maj 2007 | 26,1 | 52,6 | 4,0 | -0,3 | 0,06604 | Apr 2013 | 43,9 | 73,2 | 4,3 | 0,1 | 0,00533 |
| 1 juni 2007 | 30,8 | 57,3 | 4,0 | -0,2 | 0,02938 | May 2013 | 44,1 | 73,4 | 4,3 | 0,1 | 0,00585 |
| 1 juli 2007 | 26,5 | 53,0 | 4,0 | -0,2 | 0,06221 | Jun 2013 | 38,0 | 67,3 | 4,2 | 0,0 | 0,00010 |
| 1 aug 2007 | 30,9 | 57,4 | 4,1 | -0,2 | 0,02878 | Jul 2013 | 36,4 | 65,7 | 4,2 | 0,0 | 0,00125 |
| 1 sep 2007 | 35,9 | 62,4 | 4,1 | -0,1 | 0,00742 | Aug 2013 | 35,9 | 65,2 | 4,2 | 0,0 | 0,00177 |
| 1 okt 2007 | 40,6 | 67,1 | 4,2 | 0,0 | 0,00018 | Sep 2013 | 41,7 | 71,0 | 4,3 | 0,0 | 0,00185 |
| 1 nov 2007 | 48,5 | 75 | 4,3 | 0,1 | 0,00956 | Oct 2013 | 46,4 | 75,7 | 4,3 | 0,1 | 0,01134 |
| 1 dec 2007 | 49,0 | 75,5 | 4,3 | 0,1 | 0,01091 | Nov 2013 | 43,7 | 73,0 | 4,3 | 0,1 | 0,00501 |
| 1 jan 2008 | 49,7 | 76,7 | 4,3 | 0,1 | 0,01445 | Dec 2013 | 39,7 | 69,0 | 4,2 | 0,0 | 0,00020 |
| 1 feb 2008 | 43,7 | 70,7 | 4,3 | 0,0 | 0,00150 | Jan 2014 | 36,1 | 65,4 | 4,2 | 0,0 | 0,00149 |
| 1 mars 2008 | 36,7 | 63,7 | 4,2 | -0,1 | 0,00429 | Feb 2014 | 36,5 | 65,8 | 4,2 | 0,0 | 0,00106 |
| 1 april 2008 | 47,6 | 74,6 | 4,3 | 0,1 | 0,00855 | Mar 2014 | 36,4 | 65,7 | 4,2 | 0,0 | 0,00125 |
| 1 maj 2008 | 43,0 | 70,0 | 4,2 | 0,0 | 0,00083 | Apr 2014 | 30,0 | 59,3 | 4,1 | -0,1 | 0,01884 |
| 1 juni 2008 | 61,8 | 88,8 | 4,5 | 0,3 | 0,07112 | May 2014 | 30,9 | 60,2 | 4,1 | -0,1 | 0,01494 |

## 8.3 Base case scenario (price tree, cash flows, option value, project value, NPV).

| ***Cash flow*** | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 |
| 1 | | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 |
| 2 | | | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 |
| 3 | | | | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 |
| 4 | | | | | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 |
| 5 | | | | | | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 |
| 6 | | | | | | | 238 401 | 246 004 | 260 821 | 289 695 |
| 7 | | | | | | | | 234 500 | 238 401 | 246 004 |
| 8 | | | | | | | | | 232 498 | 234 500 |
| 9 | | | | | | | | | | 231 471 |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |

| ***Cash flow*** | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 | 37 015 118 848 | 72 134 261 908 | 140 573 894 657 | 273 947 972 799 |
| 1 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 | 37 015 118 848 | 72 134 261 908 |
| 2 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 |
| 3 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 |
| 4 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 |
| 5 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 |
| 6 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 |
| 7 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 |
| 8 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 |
| 9 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 |
| 10 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 |
| 11 | | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 |
| 12 | | | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 |
| 13 | | | | 230 463 | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 |
| 14 | | | | | 230 427 | 230 463 | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 |
| 15 | | | | | | 230 408 | 230 427 | 230 463 | 230 535 | 230 673 | 230 944 |
| 16 | | | | | | | 230 398 | 230 408 | 230 427 | 230 463 | 230 535 |
| 17 | | | | | | | | 230 393 | 230 398 | 230 408 | 230 427 |
| 18 | | | | | | | | | 230 391 | 230 393 | 230 398 |
| 19 | | | | | | | | | | 230 390 | 230 391 |
| 20 | | | | | | | | | | | 230 389 |

| ***Option value*** | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 0 | 363 907 | 742 189 | 1 502 528 | 3 020 501 | 6 032 648 | 11 978 186 | 23 662 530 | 46 546 602 | 91 254 915 | 178 459 151 |
| 1 | | 167 083 | 347 258 | 715 384 | 1 461 022 | 2 958 929 | 5 945 383 | 11 859 974 | 23 508 179 | 46 347 539 |
| 2 | | | 72 942 | 155 283 | 327 300 | 682 915 | 1 410 487 | 2 884 131 | 5 840 696 | 11 721 846 |
| 3 | | | | 29 702 | 65 136 | 141 334 | 303 277 | 643 284 | 1 348 327 | 2 792 257 |
| 4 | | | | | 10 988 | 24 973 | 56 160 | 124 862 | 274 232 | 594 461 |
| 5 | | | | | | 3 556 | 8 428 | 19 785 | 45 952 | 105 474 |
| 6 | | | | | | | 949 | 2 361 | 5 830 | 14 267 |
| 7 | | | | | | | | 188 | 495 | 1 295 |
| 8 | | | | | | | | | 22 | 62 |
| 9 | | | | | | | | | | 1 |
| 10 | | | | | | | | | | |
| 11 | | | | | | | | | | |
| 12 | | | | | | | | | | |
| 13 | | | | | | | | | | |
| 14 | | | | | | | | | | |
| 15 | | | | | | | | | | |
| 16 | | | | | | | | | | |
| 17 | | | | | | | | | | |
| 18 | | | | | | | | | | |
| 19 | | | | | | | | | | |
| 20 | | | | | | | | | | |

| ***Option value*** | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 348 392 322 | 679 385 257 | 1 323 971 952 | 2 579 194 943 | 5 023 490 983 | 9 783 230 463 | 19 051 756 415 | 37 100 091 610 | 72 245 054 302 | 140 681 703 448 | 273 946 129 659 |
| 1 | 90 989 038 | 178 069 657 | 347 751 042 | 678 232 984 | 1 321 812 057 | 2 575 076 295 | 5 015 561 610 | 9 767 884 223 | 19 021 971 336 | 37 042 194 195 | 72 132 418 768 |
| 2 | 23 335 355 | 46 136 686 | 90 721 235 | 177 684 782 | 347 111 474 | 677 074 817 | 1 319 647 530 | 2 570 955 744 | 5 007 635 937 | 9 752 552 888 | 18 992 223 290 |
| 3 | 5 713 996 | 11 560 193 | 23 144 262 | 45 919 983 | 90 460 034 | 177 306 149 | 346 464 906 | 675 910 137 | 1 317 477 724 | 2 566 832 616 | 4 999 713 252 |
| 4 | 1 270 883 | 2 677 857 | 5 559 228 | 11 371 896 | 22 939 715 | 45 710 507 | 90 213 164 | 176 919 789 | 345 810 696 | 674 738 277 | 1 315 301 943 |
| 5 | 238 955 | 533 595 | 1 172 708 | 2 532 785 | 5 368 467 | 11 157 277 | 22 738 722 | 45 529 089 | 89 958 030 | 176 525 036 | 345 148 150 |
| 6 | 34 573 | 82 838 | 195 922 | 456 466 | 1 045 012 | 2 343 824 | 5 132 354 | 10 932 196 | 22 588 670 | 45 338 959 | 89 693 939 |
| 7 | 3 369 | 8 710 | 22 357 | 56 898 | 143 301 | 356 297 | 871 504 | 2 086 367 | 4 849 434 | 10 795 945 | 22 429 497 |
| 8 | 172 | 478 | 1 330 | 3 698 | 10 283 | 28 582 | 79 419 | 220 603 | 612 560 | 1 700 317 | 4 717 887 |
| 9 | 2 | 5 | 13 | 37 | 106 | 299 | 845 | 2 392 | 6 768 | 19 151 | 54 189 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 17 | | | | | | | | 0 | 0 | 0 | 0 |
| 18 | | | | | | | | | 0 | 0 | 0 |
| 19 | | | | | | | | | | 0 | 0 |
| 20 | | | | | | | | | | | 0 |

| Project value | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| | 0 | -1 173 825 | -757 377 | 54 189 | 1 635 755 | 4 717 887 | 10 724 298 | 22 429 497 | 45 240 403 | 89 693 939 | 176 324 289 | 345 148 150 |
| | 1 | | -1 387 520 | -1 173 825 | -757 377 | 54 189 | 1 635 755 | 4 717 887 | 10 724 298 | 22 429 497 | 45 240 403 | 89 693 939 |
| | 2 | | | -1 497 176 | -1 387 520 | -1 173 825 | -757 377 | 54 189 | 1 635 755 | 4 717 887 | 10 724 298 | 22 429 497 |
| | 3 | | | | -1 553 445 | -1 497 176 | -1 387 520 | -1 173 825 | -757 377 | 54 189 | 1 635 755 | 4 717 887 |
| | 4 | | | | | -1 582 319 | -1 553 445 | -1 497 176 | -1 387 520 | -1 173 825 | -757 377 | 54 189 |
| | 5 | | | | | | -1 597 136 | -1 582 319 | -1 553 445 | -1 497 176 | -1 387 520 | -1 173 825 |
| | 6 | | | | | | | -1 604 739 | -1 597 136 | -1 582 319 | -1 553 445 | -1 497 176 |
| | 7 | | | | | | | | -1 608 640 | -1 604 739 | -1 597 136 | -1 582 319 |
| | 8 | | | | | | | | | -1 610 642 | -1 608 640 | -1 604 739 |
| | 9 | | | | | | | | | | -1 611 669 | -1 610 642 |
| | 10 | | | | | | | | | | | -1 612 196 |
| | 11 | | | | | | | | | | | |
| | 12 | | | | | | | | | | | |
| | 13 | | | | | | | | | | | |
| | 14 | | | | | | | | | | | |
| | 15 | | | | | | | | | | | |

| Project value | | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| | 0 | 674 149 430 | 1 315 301 943 | 2 564 769 859 | 4 999 713 252 | 9 744 892 576 | 18 992 223 290 | 37 013 275 708 | 72 132 418 768 | 140 572 051 517 | 273 946 129 659 | |
| | 1 | 176 324 289 | 345 148 150 | 674 149 430 | 1 315 301 943 | 2 564 769 859 | 4 999 713 252 | 9 744 892 576 | 18 992 223 290 | 37 013 275 708 | 72 132 418 768 | |
| | 2 | 45 240 403 | 89 693 939 | 176 324 289 | 345 148 150 | 674 149 430 | 1 315 301 943 | 2 564 769 859 | 4 999 713 252 | 9 744 892 576 | 18 992 223 290 | |
| | 3 | 10 724 298 | 22 429 497 | 45 240 403 | 89 693 939 | 176 324 289 | 345 148 150 | 674 149 430 | 1 315 301 943 | 2 564 769 859 | 4 999 713 252 | positive |
| | 4 | 1 635 755 | 4 717 887 | 10 724 298 | 22 429 497 | 45 240 403 | 89 693 939 | 176 324 289 | 345 148 150 | 674 149 430 | 1 315 301 943 | project |
| | 5 | -757 377 | 54 189 | 1 635 755 | 4 717 887 | 10 724 298 | 22 429 497 | 45 240 403 | 89 693 939 | 176 324 289 | 345 148 150 | values |
| | 6 | -1 387 520 | -1 173 825 | -757 377 | 54 189 | 1 635 755 | 4 717 887 | 10 724 298 | 22 429 497 | 45 240 403 | 89 693 939 | |
| | 7 | -1 553 445 | -1 497 176 | -1 387 520 | -1 173 825 | -757 377 | 54 189 | 1 635 755 | 4 717 887 | 10 724 298 | 22 429 497 | |
| | 8 | -1 597 136 | -1 582 319 | -1 553 445 | -1 497 176 | -1 387 520 | -1 173 825 | -757 377 | 54 189 | 1 635 755 | 4 717 887 | |
| | 9 | -1 608 640 | -1 604 739 | -1 597 136 | -1 582 319 | -1 553 445 | -1 497 176 | -1 387 520 | -1 173 825 | -757 377 | 54 189 | |
| | 10 | -1 611 669 | -1 610 642 | -1 608 640 | -1 604 739 | -1 597 136 | -1 582 319 | -1 553 445 | -1 497 176 | -1 387 520 | -1 173 825 | |
| | 11 | -1 612 467 | -1 612 196 | -1 611 669 | -1 610 642 | -1 608 640 | -1 604 739 | -1 597 136 | -1 582 319 | -1 553 445 | -1 497 176 | |
| | 12 | | -1 612 605 | -1 612 467 | -1 612 196 | -1 611 669 | -1 610 642 | -1 608 640 | -1 604 739 | -1 597 136 | -1 582 319 | |
| | 13 | | | -1 612 677 | -1 612 605 | -1 612 467 | -1 612 196 | -1 611 669 | -1 610 642 | -1 608 640 | -1 604 739 | |
| | 14 | | | | -1 612 713 | -1 612 677 | -1 612 605 | -1 612 467 | -1 612 196 | -1 611 669 | -1 610 642 | |
| | 15 | | | | | -1 612 732 | -1 612 713 | -1 612 677 | -1 612 605 | -1 612 467 | -1 612 196 | |
| | | | | | | | -1 612 742 | -1 612 732 | -1 612 713 | -1 612 677 | -1 612 605 | |
| | | | | | | | | -1 612 747 | -1 612 742 | -1 612 732 | -1 612 713 | |
| | | | | | | | | | -1 612 749 | -1 612 747 | -1 612 742 | |
| | | | | | | | | | | -1 612 750 | -1 612 749 | |
| | | | | | | | | | | | -1 612 751 | |

| | | **Net present value** | |
|---|---|---|---|
| | Year | yearly CF | PV |
| | 1 | 118483,78 | 113926,71 |
| | 2 | 118483,78 | 109544,92 |
| | 3 | 118483,78 | 105331,65 |
| | 4 | 118483,78 | 101280,43 |
| | 5 | 118483,78 | 97385,03 |
| | 6 | 118483,78 | 93639,45 |
| | 7 | 118483,78 | 90037,94 |
| | 8 | 118483,78 | 86574,94 |
| | 9 | 118483,78 | 83245,13 |
| | 10 | 118483,78 | 80043,40 |
| | 11 | 118483,78 | 76964,81 |
| | 12 | 118483,78 | 74004,62 |
| | 13 | 118483,78 | 71158,29 |
| | 14 | 118483,78 | 68421,43 |
| Green certificates | 15 | 118483,78 | 65789,84 |
| only first 15 | 16 | 97762,41 | 52196,15 |
| years | 17 | 97762,41 | 50188,61 |
| | 18 | 97762,41 | 48258,28 |
| | 19 | 97762,41 | 46402,19 |
| | 20 | 97762,41 | 44617,49 |
| | 21 | 97762,41 | 42901,43 |
| | 22 | 97762,41 | 41251,38 |
| | 23 | 97762,41 | 39664,78 |
| | 24 | 97762,41 | 38139,22 |
| | 25 | 97762,41 | 36672,32 |
| | | Tot = | 1757640,43 |
| | | cost (-) | 1843140,00 |
| | | **NPV** | **-85499,57** |

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 |
| 1 | | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 |
| 2 | | | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 |
| 3 | | | | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 |
| 4 | | | | | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 |
| 5 | | | | | | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 |
| 6 | | | | | | | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 |
| 7 | | | | | | | | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 |
| 8 | | | | | | | | | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 |
| 9 | | | | | | | | | *Threshold* | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 |
| 0 | | | | | | | | | | | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 |
| 1 | | | | | | | | | | | | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 |
| 2 | | | | | | | | | | | | | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 |
| 3 | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 |
| 4 | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 |
| 5 | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 |
| 6 | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 7 | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 |
| 8 | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 |
| 9 | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 |
| 0 | | | | | | | | | | | | | | | | | | | | | 0,000 |
| 1 | | | | | | | | | | | | | | | | | | | | | |

| 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 |
| 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 |
| 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 |
| 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 |
| 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 |
| 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 |
| 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 |
| 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 |
| 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 |
| 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 |
| 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 |
| 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 |
| 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 |
| 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 |
| 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 |
| 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 |
| 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 |
| 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 |
| 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 |
| | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 |
| | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 |
| | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 |
| | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | | 0,000 |

| 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |
| 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 | 136743940915,753 | 266484437872,631 | 519320674486,359 | 1012043949365,140 | 1972255305374,900 | 3843500069359,160 | 7490152386917,190 |
| 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 | 136743940915,753 | 266484437872,631 | 519320674486,359 | 1012043949365,140 | 1972255305374,900 |
| 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 | 136743940915,753 | 266484437872,631 | 519320674486,359 |
| 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 | 136743940915,753 |
| 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 |
| 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 |
| 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 |
| 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 |
| 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 |
| 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 |
| 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 |
| 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 |
| 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 |
| 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 |
| 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 |
| 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 |
| 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 |
| 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 |
| 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 |
| 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 |
| 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 |
| 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 |
| 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 |
| 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | 0,000 | 0,000 |
| | | | | | | | | | | | | 0,000 |

## 8.4 Volatility = 30 % (CF, OV, PV).

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 | 2041 | 2042 | 2043 | 2044 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 |
| 0 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 | 204,456 | 275,987 | 372,543 | 502,881 | 678,818 | 916,308 | 1236,887 | 1669,623 | 2253,755 | 3042,251 |
| 1 | | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 | 204,456 | 275,987 | 372,543 | 502,881 | 678,818 | 916,308 | 1236,887 | 1669,623 |
| 2 | | | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 | 204,456 | 275,987 | 372,543 | 502,881 | 678,818 | 916,308 |
| 3 | | | | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 | 204,456 | 275,987 | 372,543 | 502,881 |
| 4 | | | | | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 | 204,456 | 275,987 |
| 5 | | | | | | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 |
| 6 | | | | | | | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 |
| 7 | | | | | | | Threshold | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 |
| 8 | | | | | | | | | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 |
| 9 | | | | | | | | | | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 |
| 10 | | | | | | | | | | | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 |
| 11 | | | | | | | | | | | | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 |
| 12 | | | | | | | | | | | | | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 |
| 13 | | | | | | | | | | | | | | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 |
| 14 | | | | | | | | | | | | | | | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 |
| 15 | | | | | | | | | | | | | | | | 0,008 | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 |
| 16 | | | | | | | | | | | | | | | | | 0,006 | 0,008 | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 |
| 17 | | | | | | | | | | | | | | | | | | 0,004 | 0,006 | 0,008 | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 |
| 18 | | | | | | | | | | | | | | | | | | | 0,003 | 0,004 | 0,006 | 0,008 | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 |
| 19 | | | | | | | | | | | | | | | | | | | | 0,002 | 0,003 | 0,004 | 0,006 | 0,008 | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 |
| 20 | | | | | | | | | | | | | | | | | | | | | 0,002 | 0,002 | 0,003 | 0,004 | 0,006 | 0,008 | 0,010 | 0,014 | 0,019 |
| 21 | | | | | | | | | | | | | | | | | | | | | | 0,001 | 0,002 | 0,002 | 0,003 | 0,004 | 0,006 | 0,008 | 0,010 |
| 22 | | | | | | | | | | | | | | | | | | | | | | | 0,001 | 0,001 | 0,002 | 0,002 | 0,003 | 0,004 | 0,006 |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | 0,001 | 0,001 | 0,001 | 0,002 | 0,002 | 0,003 |
| 24 | | | | | | | | | | | | | | | | | | | | | | | | | 0,001 | 0,001 | 0,001 | 0,001 | 0,002 |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | | | 0,000 | 0,001 | 0,001 | 0,001 |
| 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,001 |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0,000 |

| 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |
| 4106,610 | 5543,343 | 7482,731 | 10100,630 | 13634,425 | 18404,548 | 24843,541 | 33535,273 | 45267,884 | 61105,251 | 82483,462 | 111341,028 | 150294,667 | 202876,579 | 273854,738 | 369665,230 | ####### |
| 2253,755 | 3042,251 | 4106,610 | 5543,343 | 7482,731 | 10100,630 | 13634,425 | 18404,548 | 24843,541 | 33535,273 | 45267,884 | 61105,251 | 82483,462 | 111341,028 | 150294,667 | 202876,579 | ####### |
| 1236,887 | 1669,623 | 2253,755 | 3042,251 | 4106,610 | 5543,343 | 7482,731 | 10100,630 | 13634,425 | 18404,548 | 24843,541 | 33535,273 | 45267,884 | 61105,251 | 82483,462 | 111341,028 | ####### |
| 678,818 | 916,308 | 1236,887 | 1669,623 | 2253,755 | 3042,251 | 4106,610 | 5543,343 | 7482,731 | 10100,630 | 13634,425 | 18404,548 | 24843,541 | 33535,273 | 45267,884 | 61105,251 | 82483,462 |
| 372,543 | 502,881 | 678,818 | 916,308 | 1236,887 | 1669,623 | 2253,755 | 3042,251 | 4106,610 | 5543,343 | 7482,731 | 10100,630 | 13634,425 | 18404,548 | 24843,541 | 33535,273 | 45267,884 |
| 204,456 | 275,987 | 372,543 | 502,881 | 678,818 | 916,308 | 1236,887 | 1669,623 | 2253,755 | 3042,251 | 4106,610 | 5543,343 | 7482,731 | 10100,630 | 13634,425 | 18404,548 | 24843,541 |
| 112,208 | 151,465 | 204,456 | 275,987 | 372,543 | 502,881 | 678,818 | 916,308 | 1236,887 | 1669,623 | 2253,755 | 3042,251 | 4106,610 | 5543,343 | 7482,731 | 10100,630 | 13634,425 |
| 61,581 | 83,126 | 112,208 | 151,465 | 204,456 | 275,987 | 372,543 | 502,881 | 678,818 | 916,308 | 1236,887 | 1669,623 | 2253,755 | 3042,251 | 4106,610 | 5543,343 | 7482,731 |
| 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 | 204,456 | 275,987 | 372,543 | 502,881 | 678,818 | 916,308 | 1236,887 | 1669,623 | 2253,755 | 3042,251 | 4106,610 |
| 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 | 204,456 | 275,987 | 372,543 | 502,881 | 678,818 | 916,308 | 1236,887 | 1669,623 | 2253,755 |
| 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 | 204,456 | 275,987 | 372,543 | 502,881 | 678,818 | 916,308 | 1236,887 |
| 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 | 204,456 | 275,987 | 372,543 | 502,881 | 678,818 |
| 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 | 204,456 | 275,987 | 372,543 |
| 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 | 151,465 | 204,456 |
| 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 | 83,126 | 112,208 |
| 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 | 45,620 | 61,581 |
| 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 | 25,037 | 33,796 |
| 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 | 13,741 | 18,548 |
| 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 | 7,541 | 10,179 |
| 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 | 4,139 | 5,587 |
| 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 | 2,271 | 3,066 |
| 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 | 1,247 | 1,683 |
| 0,008 | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 | 0,684 | 0,923 |
| 0,004 | 0,006 | 0,008 | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 | 0,375 | 0,507 |
| 0,002 | 0,003 | 0,004 | 0,006 | 0,008 | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 | 0,206 | 0,278 |
| 0,001 | 0,002 | 0,002 | 0,003 | 0,004 | 0,006 | 0,008 | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 | 0,113 | 0,153 |
| 0,001 | 0,001 | 0,001 | 0,002 | 0,002 | 0,003 | 0,004 | 0,006 | 0,008 | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 | 0,062 | 0,084 |
| 0,000 | 0,001 | 0,001 | 0,001 | 0,001 | 0,002 | 0,002 | 0,003 | 0,004 | 0,006 | 0,008 | 0,010 | 0,014 | 0,019 | 0,025 | 0,034 | 0,046 |
| 0,000 | 0,000 | 0,000 | 0,001 | 0,001 | 0,001 | 0,001 | 0,002 | 0,002 | 0,003 | 0,004 | 0,006 | 0,008 | 0,010 | 0,014 | 0,019 | 0,025 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,001 | 0,001 | 0,001 | 0,002 | 0,002 | 0,003 | 0,004 | 0,006 | 0,008 | 0,010 | 0,014 |
| | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,001 | 0,001 | 0,001 | 0,002 | 0,002 | 0,003 | 0,004 | 0,006 | 0,008 |
| | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,001 | 0,001 | 0,001 | 0,002 | 0,002 | 0,003 | 0,004 |
| | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,001 | 0,001 | 0,001 | 0,002 | 0,002 |
| | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,001 | 0,001 | 0,001 |
| | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,001 |
| | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | 0,000 |

| ***Cash flow*** | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 638 541 | 781 336 | 974 090 | 1 234 281 | 1 585 502 | 2 059 600 | 2 699 566 | 3 563 430 | 4 729 524 | 6 303 586 | 8 428 348 | 11 296 477 | 15 168 045 | 20 394 116 | 27 448 574 | 36 971 096 | 49 825 156 | 67 176 323 | 90 597 947 | 122 213 834 | 164 890 816 |
| 1 | | 532 755 | 638 541 | 781 336 | 974 090 | 1 234 281 | 1 585 502 | 2 059 600 | 2 699 566 | 3 563 430 | 4 729 524 | 6 303 586 | 8 428 348 | 11 296 477 | 15 168 045 | 20 394 116 | 27 448 574 | 36 971 096 | 49 825 156 | 67 176 323 | 90 597 947 |
| 2 | | | 454 387 | 532 755 | 638 541 | 781 336 | 974 090 | 1 234 281 | 1 585 502 | 2 059 600 | 2 699 566 | 3 563 430 | 4 729 524 | 6 303 586 | 8 428 348 | 11 296 477 | 15 168 045 | 20 394 116 | 27 448 574 | 36 971 096 | 49 825 156 |
| 3 | | | | 396 331 | 454 387 | 532 755 | 638 541 | 781 336 | 974 090 | 1 234 281 | 1 585 502 | 2 059 600 | 2 699 566 | 3 563 430 | 4 729 524 | 6 303 586 | 8 428 348 | 11 296 477 | 15 168 045 | 20 394 116 | 27 448 574 |
| 4 | | | | | 353 321 | 396 331 | 454 387 | 532 755 | 638 541 | 781 336 | 974 090 | 1 234 281 | 1 585 502 | 2 059 600 | 2 699 566 | 3 563 430 | 4 729 524 | 6 303 586 | 8 428 348 | 11 296 477 | 15 168 045 |
| 5 | | | | | | 321 459 | 353 321 | 396 331 | 454 387 | 532 755 | 638 541 | 781 336 | 974 090 | 1 234 281 | 1 585 502 | 2 059 600 | 2 699 566 | 3 563 430 | 4 729 524 | 6 303 586 | 8 428 348 |
| 6 | | | | | | | 297 855 | 321 459 | 353 321 | 396 331 | 454 387 | 532 755 | 638 541 | 781 336 | 974 090 | 1 234 281 | 1 585 502 | 2 059 600 | 2 699 566 | 3 563 430 | 4 729 524 |
| 7 | | | | | | | | 280 369 | 297 855 | 321 459 | 353 321 | 396 331 | 454 387 | 532 755 | 638 541 | 781 336 | 974 090 | 1 234 281 | 1 585 502 | 2 059 600 | 2 699 566 |
| 8 | | | | | | | | | 267 415 | 280 369 | 297 855 | 321 459 | 353 321 | 396 331 | 454 387 | 532 755 | 638 541 | 781 336 | 974 090 | 1 234 281 | 1 585 502 |
| 9 | | | | | | | | | | 257 818 | 267 415 | 280 369 | 297 855 | 321 459 | 353 321 | 396 331 | 454 387 | 532 755 | 638 541 | 781 336 | 974 090 |
| 10 | | | | | | | | | | | 250 709 | 257 818 | 267 415 | 280 369 | 297 855 | 321 459 | 353 321 | 396 331 | 454 387 | 532 755 | 638 541 |
| 11 | | | | | | | | | | | | 245 442 | 250 709 | 257 818 | 267 415 | 280 369 | 297 855 | 321 459 | 353 321 | 396 331 | 454 387 |
| 12 | | | | | | | | | | | | | 241 540 | 245 442 | 250 709 | 257 818 | 267 415 | 280 369 | 297 855 | 321 459 | 353 321 |
| 13 | | | | | | | | | | | | | | 238 650 | 241 540 | 245 442 | 250 709 | 257 818 | 267 415 | 280 369 | 297 855 |
| 14 | | | | | | | | | | | | | | | 236 509 | 238 650 | 241 540 | 245 442 | 250 709 | 257 818 | 267 415 |
| 15 | | | | | | | | | | | | | | | | 234 922 | 236 509 | 238 650 | 241 540 | 245 442 | 250 709 |
| 16 | | | | | | | | | | | | | | | | | 233 747 | 234 922 | 236 509 | 238 650 | 241 540 |
| 17 | | | | | | | | | | | | | | | | | | 232 877 | 233 747 | 234 922 | 236 509 |
| 18 | | | | | | | | | | | | | | | | | | | 232 232 | 232 877 | 233 747 |
| 19 | | | | | | | | | | | | | | | | | | | | 231 754 | 232 232 |
| 20 | | | | | | | | | | | | | | | | | | | | | 231 400 |

| ***Option value*** | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 145 234 | 225 777 | 347 201 | 527 962 | 793 615 | 1 178 991 | 1 730 915 | 2 511 644 | 3 603 384 | 5 114 496 | 7 188 303 | 10 015 766 | 13 853 479 | 19 048 463 | 26 071 167 | 35 558 580 | 48 371 016 | 65 668 897 | 89 017 434 | 120 527 820 | 163 047 676 |
| 1 | | 78 499 | 125 709 | 199 105 | 311 712 | 482 090 | 736 177 | 1 109 508 | 1 649 880 | 2 420 597 | 3 504 619 | 5 010 327 | 7 080 024 | 9 902 756 | 13 733 084 | 18 916 883 | 25 924 574 | 35 392 972 | 48 181 046 | 65 447 402 | 88 754 807 |
| 2 | | | 38 860 | 64 373 | 105 494 | 170 897 | 273 450 | 431 816 | 672 429 | 1 031 804 | 1 559 148 | 2 319 292 | 3 396 229 | 4 898 105 | 6 965 276 | 9 783 727 | 13 605 706 | 18 777 193 | 25 769 561 | 35 218 628 | 47 982 016 |
| 3 | | | | 17 158 | 29 531 | 50 322 | 84 820 | 141 280 | 232 293 | 376 590 | 601 246 | 944 182 | 1 456 736 | 2 206 078 | 3 277 611 | 4 778 468 | 6 844 967 | 9 658 259 | 13 469 877 | 18 628 725 | 25 605 434 |
| 4 | | | | | 6 499 | 11 678 | 20 802 | 36 701 | 64 070 | 110 536 | 188 203 | 315 753 | 521 075 | 844 181 | 1 339 842 | 2 079 099 | 3 149 197 | 4 653 683 | 6 719 667 | 9 523 993 | 13 324 905 |
| 5 | | | | | | 1 985 | 3 742 | 7 008 | 13 027 | 24 017 | 43 858 | 79 226 | 141 338 | 248 512 | 429 589 | 727 864 | 1 204 247 | 1 937 039 | 3 015 074 | 4 527 210 | 6 585 208 |
| 6 | | | | | | | 435 | 866 | 1 717 | 3 387 | 6 650 | 12 983 | 25 179 | 48 446 | 92 330 | 173 918 | 322 815 | 587 855 | 1 043 284 | 1 784 917 | 2 886 384 |
| 7 | | | | | | | | 52 | 109 | 230 | 486 | 1 027 | 2 168 | 4 578 | 9 667 | 20 410 | 43 094 | 90 988 | 192 111 | 405 621 | 856 426 |
| 8 | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 17 | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 |
| 18 | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| 19 | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| 20 | | | | | | | | | | | | | | | | | | | | | 0 |

| ***Project value*** | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | -1 204 599 | -1 061 804 | -869 050 | -608 859 | -257 638 | 216 460 | 856 426 | 1 720 290 | 2 886 384 | 4 460 446 | 6 585 208 | 9 453 337 | 13 324 905 | 18 550 976 | 25 605 434 | 35 127 956 | 47 982 016 | 65 333 183 | 88 754 807 | 120 370 694 | 163 047 676 |
| 1 | | -1 310 385 | -1 204 599 | -1 061 804 | -869 050 | -608 859 | -257 638 | 216 460 | 856 426 | 1 720 290 | 2 886 384 | 4 460 446 | 6 585 208 | 9 453 337 | 13 324 905 | 18 550 976 | 25 605 434 | 35 127 956 | 47 982 016 | 65 333 183 | 88 754 807 |
| 2 | | | -1 388 753 | -1 310 385 | -1 204 599 | -1 061 804 | -869 050 | -608 859 | -257 638 | 216 460 | 856 426 | 1 720 290 | 2 886 384 | 4 460 446 | 6 585 208 | 9 453 337 | 13 324 905 | 18 550 976 | 25 605 434 | 35 127 956 | 47 982 016 |
| 3 | | | | -1 446 809 | -1 388 753 | -1 310 385 | -1 204 599 | -1 061 804 | -869 050 | -608 859 | -257 638 | 216 460 | 856 426 | 1 720 290 | 2 886 384 | 4 460 446 | 6 585 208 | 9 453 337 | 13 324 905 | 18 550 976 | 25 605 434 |
| 4 | | | | | -1 489 819 | -1 446 809 | -1 388 753 | -1 310 385 | -1 204 599 | -1 061 804 | -869 050 | -608 859 | -257 638 | 216 460 | 856 426 | 1 720 290 | 2 886 384 | 4 460 446 | 6 585 208 | 9 453 337 | 13 324 905 |
| 5 | | | | | | -1 521 681 | -1 489 819 | -1 446 809 | -1 388 753 | -1 310 385 | -1 204 599 | -1 061 804 | -869 050 | -608 859 | -257 638 | 216 460 | 856 426 | 1 720 290 | 2 886 384 | 4 460 446 | 6 585 208 |
| 6 | | | | | | | -1 545 285 | -1 521 681 | -1 489 819 | -1 446 809 | -1 388 753 | -1 310 385 | -1 204 599 | -1 061 804 | -869 050 | -608 859 | -257 638 | 216 460 | 856 426 | 1 720 290 | 2 886 384 |
| 7 | | | | | | | | -1 562 771 | -1 545 285 | -1 521 681 | -1 489 819 | -1 446 809 | -1 388 753 | -1 310 385 | -1 204 599 | -1 061 804 | -869 050 | -608 859 | -257 638 | 216 460 | 856 426 |
| 8 | | | | | | | | | -1 575 725 | -1 562 771 | -1 545 285 | -1 521 681 | -1 489 819 | -1 446 809 | -1 388 753 | -1 310 385 | -1 204 599 | -1 061 804 | -869 050 | -608 859 | -257 638 |
| 9 | | | | | | | | | | -1 585 322 | -1 575 725 | -1 562 771 | -1 545 285 | -1 521 681 | -1 489 819 | -1 446 809 | -1 388 753 | -1 310 385 | -1 204 599 | -1 061 804 | -869 050 |
| 10 | | | | | | | | | | | -1 592 431 | -1 585 322 | -1 575 725 | -1 562 771 | -1 545 285 | -1 521 681 | -1 489 819 | -1 446 809 | -1 388 753 | -1 310 385 | -1 204 599 |
| 11 | | | | | | | | | | | | -1 597 698 | -1 592 431 | -1 585 322 | -1 575 725 | -1 562 771 | -1 545 285 | -1 521 681 | -1 489 819 | -1 446 809 | -1 388 753 |
| 12 | | | | | | | | | | | | | -1 601 600 | -1 597 698 | -1 592 431 | -1 585 322 | -1 575 725 | -1 562 771 | -1 545 285 | -1 521 681 | -1 489 819 |
| 13 | | | | | | | | | | | | | | -1 604 490 | -1 601 600 | -1 597 698 | -1 592 431 | -1 585 322 | -1 575 725 | -1 562 771 | -1 545 285 |
| 14 | | | | | | | | | | | | | | | -1 606 631 | -1 604 490 | -1 601 600 | -1 597 698 | -1 592 431 | -1 585 322 | -1 575 725 |
| 15 | | | | | | | | | | | | | | | | -1 608 218 | -1 606 631 | -1 604 490 | -1 601 600 | -1 597 698 | -1 592 431 |
| | | | | | | | | | | | | | | | | | -1 609 393 | -1 608 218 | -1 606 631 | -1 604 490 | -1 601 600 |
| | | | | | | | | | | | | | | | | | | -1 610 263 | -1 609 393 | -1 608 218 | -1 606 631 |
| | | | | | | | | | | | | | | | | | | | -1 610 908 | -1 610 263 | -1 609 393 |
| | | | | | | | | | | | | | | | | | | | | -1 611 386 | -1 610 908 |
| | | | | | | | | | | | | | | | | | | | | | -1 611 740 |

# 8.5 Volatility = 10 % (CF, OV, PV).

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Price tree* | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 2 |
| 0 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,139 | 4,574 | 5,055 | 5,587 | 6,174 | 6,823 | 7,54 |
| 1 | | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,139 | 4,574 | 5,055 | 5,587 | 6,17 |
| 2 | | | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,139 | 4,574 | 5,05 |
| 3 | | | | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,13 |
| 4 | | | | | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,38 |
| 5 | | | | | | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,77 |
| 6 | | | | | | | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,27 |
| 7 | | | | | | | | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,86 |
| 8 | | | | | | | | | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,52 |
| 9 | | | | | | | | | | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,24 |
| 10 | | | | | | | | | | | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,02 |
| 11 | | | | | | | | | | | | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,83 |
| 12 | | | | | | | | | | | | | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,68 |
| 13 | | | | | | | | | | | | | | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,56 |
| 14 | | | | | | | | | | | | | | | 0,169 | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,45 |
| 15 | | | | | | | | | | | | | | | | 0,153 | 0,169 | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,37 |
| 16 | | | | | | | | | | | | | | | | | 0,138 | 0,153 | 0,169 | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,30 |
| 17 | | | | | | | | | | | | | | | | | | 0,125 | 0,138 | 0,153 | 0,169 | 0,186 | 0,206 | 0,228 | 0,25 |
| 18 | | | | | | | | | | | | | | | | | | | 0,113 | 0,125 | 0,138 | 0,153 | 0,169 | 0,186 | 0,20 |
| 19 | | | | | | | | | | | | | | | | | | | | 0,102 | 0,113 | 0,125 | 0,138 | 0,153 | 0,16 |
| 20 | | | | | | | | | | | | | | | | | | | | | 0,093 | 0,102 | 0,113 | 0,125 | 0,13 |
| 21 | | | | | | | | | | | | | | | | | | | | | | 0,084 | 0,093 | 0,102 | 0,11 |
| 22 | | | | | | | | | | | | | | | | | | | | | | | 0,076 | 0,084 | 0,09 |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | 0,069 | 0,07 |
| 24 | | | | | | | | | | | | | | | | | | | | | | | | | 0,06 |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | | |

| 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 | 2061 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 |
| 8,334 | 9,211 | 10,179 | 11,250 | 12,433 | 13,741 | 15,186 | 16,783 | 18,548 | 20,499 | 22,654 | 25,037 | 27,670 | 30,580 | 33,796 | 37,351 | 41,279 | 45,620 | 50,418 | 55,721 | 61,581 |
| 6,823 | 7,541 | 8,334 | 9,211 | 10,179 | 11,250 | 12,433 | 13,741 | 15,186 | 16,783 | 18,548 | 20,499 | 22,654 | 25,037 | 27,670 | 30,580 | 33,796 | 37,351 | 41,279 | 45,620 | 50,418 |
| 5,587 | 6,174 | 6,823 | 7,541 | 8,334 | 9,211 | 10,179 | 11,250 | 12,433 | 13,741 | 15,186 | 16,783 | 18,548 | 20,499 | 22,654 | 25,037 | 27,670 | 30,580 | 33,796 | 37,351 | 41,279 |
| 4,574 | 5,055 | 5,587 | 6,174 | 6,823 | 7,541 | 8,334 | 9,211 | 10,179 | 11,250 | 12,433 | 13,741 | 15,186 | 16,783 | 18,548 | 20,499 | 22,654 | 25,037 | 27,670 | 30,580 | 33,796 |
| 3,745 | 4,139 | 4,574 | 5,055 | 5,587 | 6,174 | 6,823 | 7,541 | 8,334 | 9,211 | 10,179 | 11,250 | 12,433 | 13,741 | 15,186 | 16,783 | 18,548 | 20,499 | 22,654 | 25,037 | 27,670 |
| 3,066 | 3,388 | 3,745 | 4,139 | 4,574 | 5,055 | 5,587 | 6,174 | 6,823 | 7,541 | 8,334 | 9,211 | 10,179 | 11,250 | 12,433 | 13,741 | 15,186 | 16,783 | 18,548 | 20,499 | 22,654 |
| 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,139 | 4,574 | 5,055 | 5,587 | 6,174 | 6,823 | 7,541 | 8,334 | 9,211 | 10,179 | 11,250 | 12,433 | 13,741 | 15,186 | 16,783 | 18,548 |
| 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,139 | 4,574 | 5,055 | 5,587 | 6,174 | 6,823 | 7,541 | 8,334 | 9,211 | 10,179 | 11,250 | 12,433 | 13,741 | 15,186 |
| 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,139 | 4,574 | 5,055 | 5,587 | 6,174 | 6,823 | 7,541 | 8,334 | 9,211 | 10,179 | 11,250 | 12,433 |
| 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,139 | 4,574 | 5,055 | 5,587 | 6,174 | 6,823 | 7,541 | 8,334 | 9,211 | 10,179 |
| 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,139 | 4,574 | 5,055 | 5,587 | 6,174 | 6,823 | 7,541 | 8,334 |
| 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,139 | 4,574 | 5,055 | 5,587 | 6,174 | 6,823 |
| 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,139 | 4,574 | 5,055 | 5,587 |
| 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 | 4,139 | 4,574 |
| 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 | 3,388 | 3,745 |
| 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 | 2,774 | 3,066 |
| 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 | 2,271 | 2,510 |
| 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 | 1,860 | 2,055 |
| 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 | 1,522 | 1,683 |
| 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 | 1,247 | 1,378 |
| 0,153 | 0,169 | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 | 1,021 | 1,128 |
| 0,125 | 0,138 | 0,153 | 0,169 | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 | 0,836 | 0,923 |
| 0,102 | 0,113 | 0,125 | 0,138 | 0,153 | 0,169 | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 | 0,684 | 0,756 |
| 0,084 | 0,093 | 0,102 | 0,113 | 0,125 | 0,138 | 0,153 | 0,169 | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 | 0,560 | 0,619 |
| 0,069 | 0,076 | 0,084 | 0,093 | 0,102 | 0,113 | 0,125 | 0,138 | 0,153 | 0,169 | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 | 0,459 | 0,507 |
| 0,056 | 0,062 | 0,069 | 0,076 | 0,084 | 0,093 | 0,102 | 0,113 | 0,125 | 0,138 | 0,153 | 0,169 | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 | 0,375 | 0,415 |
| | 0,051 | 0,056 | 0,062 | 0,069 | 0,076 | 0,084 | 0,093 | 0,102 | 0,113 | 0,125 | 0,138 | 0,153 | 0,169 | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 | 0,307 | 0,340 |
| | | 0,046 | 0,051 | 0,056 | 0,062 | 0,069 | 0,076 | 0,084 | 0,093 | 0,102 | 0,113 | 0,125 | 0,138 | 0,153 | 0,169 | 0,186 | 0,206 | 0,228 | 0,252 | 0,278 |
| | | | 0,042 | 0,046 | 0,051 | 0,056 | 0,062 | 0,069 | 0,076 | 0,084 | 0,093 | 0,102 | 0,113 | 0,125 | 0,138 | 0,153 | 0,169 | 0,186 | 0,206 | 0,228 |
| | | | | 0,038 | 0,042 | 0,046 | 0,051 | 0,056 | 0,062 | 0,069 | 0,076 | 0,084 | 0,093 | 0,102 | 0,113 | 0,125 | 0,138 | 0,153 | 0,169 | 0,186 |
| | | | | | 0,034 | 0,038 | 0,042 | 0,046 | 0,051 | 0,056 | 0,062 | 0,069 | 0,076 | 0,084 | 0,093 | 0,102 | 0,113 | 0,125 | 0,138 | 0,153 |
| | | | | | | 0,031 | 0,034 | 0,038 | 0,042 | 0,046 | 0,051 | 0,056 | 0,062 | 0,069 | 0,076 | 0,084 | 0,093 | 0,102 | 0,113 | 0,125 |
| | | | | | | | 0,028 | 0,031 | 0,034 | 0,038 | 0,042 | 0,046 | 0,051 | 0,056 | 0,062 | 0,069 | 0,076 | 0,084 | 0,093 | 0,102 |
| | | | | | | | | 0,025 | 0,028 | 0,031 | 0,034 | 0,038 | 0,042 | 0,046 | 0,051 | 0,056 | 0,062 | 0,069 | 0,076 | 0,084 |
| | | | | | | | | | 0,023 | 0,025 | 0,028 | 0,031 | 0,034 | 0,038 | 0,042 | 0,046 | 0,051 | 0,056 | 0,062 | 0,069 |
| | | | | | | | | | | 0,021 | 0,023 | 0,025 | 0,028 | 0,031 | 0,034 | 0,038 | 0,042 | 0,046 | 0,051 | 0,056 |
| | | | | | | | | | | | 0,019 | 0,021 | 0,023 | 0,025 | 0,028 | 0,031 | 0,034 | 0,038 | 0,042 | 0,046 |
| | | | | | | | | | | | | 0,017 | 0,019 | 0,021 | 0,023 | 0,025 | 0,028 | 0,031 | 0,034 | 0,038 |
| | | | | | | | | | | | | | 0,015 | 0,017 | 0,019 | 0,021 | 0,023 | 0,025 | 0,028 | 0,031 |
| | | | | | | | | | | | | | | 0,014 | 0,015 | 0,017 | 0,019 | 0,021 | 0,023 | 0,025 |
| | | | | | | | | | | | | | | | 0,013 | 0,014 | 0,015 | 0,017 | 0,019 | 0,021 |
| | | | | | | | | | | | | | | | | 0,011 | 0,013 | 0,014 | 0,015 | 0,017 |
| | | | | | | | | | | | | | | | | | 0,010 | 0,011 | 0,013 | 0,014 |
| | | | | | | | | | | | | | | | | | | 0,009 | 0,010 | 0,011 |
| | | | | | | | | | | | | | | | | | | | 0,008 | 0,009 |
| | | | | | | | | | | | | | | | | | | | | 0,008 |

| Cash flow | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 698 317 | 747 530 | 801 918 | 862 026 | 928 456 | 1 001 872 | 1 083 010 | 1 172 681 | 1 271 783 | 1 381 307 | 1 502 351 | 1 636 124 | 1 783 967 | 1 947 358 | 2 127 933 | 2 327 500 | 2 548 055 | 2 791 806 | 3 061 193 | 3 358 911 | 3 687 941 |
| 1 | | 653 788 | 698 317 | 747 530 | 801 918 | 862 026 | 928 456 | 1 001 872 | 1 083 010 | 1 172 681 | 1 271 783 | 1 381 307 | 1 502 351 | 1 636 124 | 1 783 967 | 1 947 358 | 2 127 933 | 2 327 500 | 2 548 055 | 2 791 806 | 3 061 193 |
| 2 | | | 613 496 | 653 788 | 698 317 | 747 530 | 801 918 | 862 026 | 928 456 | 1 001 872 | 1 083 010 | 1 172 681 | 1 271 783 | 1 381 307 | 1 502 351 | 1 636 124 | 1 783 967 | 1 947 358 | 2 127 933 | 2 327 500 | 2 548 055 |
| 3 | | | | 577 038 | 613 496 | 653 788 | 698 317 | 747 530 | 801 918 | 862 026 | 928 456 | 1 001 872 | 1 083 010 | 1 172 681 | 1 271 783 | 1 381 307 | 1 502 351 | 1 636 124 | 1 783 967 | 1 947 358 | 2 127 933 |
| 4 | | | | | 544 050 | 577 038 | 613 496 | 653 788 | 698 317 | 747 530 | 801 918 | 862 026 | 928 456 | 1 001 872 | 1 083 010 | 1 172 681 | 1 271 783 | 1 381 307 | 1 502 351 | 1 636 124 | 1 783 967 |
| 5 | | | | | | 514 201 | 544 050 | 577 038 | 613 496 | 653 788 | 698 317 | 747 530 | 801 918 | 862 026 | 928 456 | 1 001 872 | 1 083 010 | 1 172 681 | 1 271 783 | 1 381 307 | 1 502 351 |
| 6 | | | | | | | 487 193 | 514 201 | 544 050 | 577 038 | 613 496 | 653 788 | 698 317 | 747 530 | 801 918 | 862 026 | 928 456 | 1 001 872 | 1 083 010 | 1 172 681 | 1 271 783 |
| 7 | | | | | | | | 462 755 | 487 193 | 514 201 | 544 050 | 577 038 | 613 496 | 653 788 | 698 317 | 747 530 | 801 918 | 862 026 | 928 456 | 1 001 872 | 1 083 010 |
| 8 | | | | | | | | | 440 642 | 462 755 | 487 193 | 514 201 | 544 050 | 577 038 | 613 496 | 653 788 | 698 317 | 747 530 | 801 918 | 862 026 | 928 456 |
| 9 | | | | | | | | | | 420 634 | 440 642 | 462 755 | 487 193 | 514 201 | 544 050 | 577 038 | 613 496 | 653 788 | 698 317 | 747 530 | 801 918 |
| 10 | | | | | | | | | | | 402 530 | 420 634 | 440 642 | 462 755 | 487 193 | 514 201 | 544 050 | 577 038 | 613 496 | 653 788 | 698 317 |
| 11 | | | | | | | | | | | | 386 148 | 402 530 | 420 634 | 440 642 | 462 755 | 487 193 | 514 201 | 544 050 | 577 038 | 613 496 |
| 12 | | | | | | | | | | | | | 371 326 | 386 148 | 402 530 | 420 634 | 440 642 | 462 755 | 487 193 | 514 201 | 544 050 |
| 13 | | | | | | | | | | | | | | 357 914 | 371 326 | 386 148 | 402 530 | 420 634 | 440 642 | 462 755 | 487 193 |
| 14 | | | | | | | | | | | | | | | 345 778 | 357 914 | 371 326 | 386 148 | 402 530 | 420 634 | 440 642 |
| 15 | | | | | | | | | | | | | | | | 334 797 | 345 778 | 357 914 | 371 326 | 386 148 | 402 530 |
| 16 | | | | | | | | | | | | | | | | | 324 861 | 334 797 | 345 778 | 357 914 | 371 326 |
| 17 | | | | | | | | | | | | | | | | | | 315 871 | 324 861 | 334 797 | 345 778 |
| 18 | | | | | | | | | | | | | | | | | | | 307 736 | 315 871 | 324 861 |
| 19 | | | | | | | | | | | | | | | | | | | | 300 376 | 307 736 |
| 20 | | | | | | | | | | | | | | | | | | | | | 293 716 |

| Option value | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 15 289 | 20 795 | 28 154 | 37 931 | 50 834 | 67 740 | 89 718 | 118 046 | 154 220 | 199 943 | 257 096 | 327 674 | 413 699 | 517 091 | 639 550 | 782 451 | 946 854 | 1 133 683 | 1 344 140 | 1 580 239 | 1 844 801 |
| 1 | | 5 560 | 7 836 | 11 004 | 15 394 | 21 446 | 29 741 | 41 039 | 56 319 | 76 823 | 104 092 | 139 995 | 186 730 | 246 770 | 322 755 | 417 271 | 532 539 | 670 034 | 830 202 | 1 012 692 | 1 218 053 |
| 2 | | | 1445 | 2 118 | 3 100 | 4 526 | 6 592 | 9 575 | 13 866 | 20 014 | 28 777 | 41 198 | 58 690 | 83 131 | 116 963 | 163 258 | 225 699 | 308 359 | 415 072 | 548 024 | 704 915 |
| 3 | | | | 201 | 308 | 473 | 724 | 1 110 | 1 700 | 2 605 | 3 992 | 6 117 | 9 373 | 14 361 | 22 005 | 33 718 | 51 665 | 79 164 | 121 301 | 185 865 | 284 793 |
| 4 | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 17 | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 |
| 18 | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| 19 | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| 20 | | | | | | | | | | | | | | | | | | | | | 0 |

| Project value | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | -1 144 823 | -1 095 610 | -1 041 222 | -981 114 | -914 684 | -841 268 | -760 130 | -670 459 | -571 357 | -461 833 | -340 789 | -207 016 | -59 173 | 104 218 | 284 793 | 484 360 | 704 915 | 948 666 | 1 218 053 | 1 515 771 | 1 844 801 |
| 1 | | -1 189 352 | -1 144 823 | -1 095 610 | -1 041 222 | -981 114 | -914 684 | -841 268 | -760 130 | -670 459 | -571 357 | -461 833 | -340 789 | -207 016 | -59 173 | 104 218 | 284 793 | 484 360 | 704 915 | 948 666 | 1 218 053 |
| 2 | | | -1 229 644 | -1 189 352 | -1 144 823 | -1 095 610 | -1 041 222 | -981 114 | -914 684 | -841 268 | -760 130 | -670 459 | -571 357 | -461 833 | -340 789 | -207 016 | -59 173 | 104 218 | 284 793 | 484 360 | 704 915 |
| 3 | | | | -1 266 102 | -1 229 644 | -1 189 352 | -1 144 823 | -1 095 610 | -1 041 222 | -981 114 | -914 684 | -841 268 | -760 130 | -670 459 | -571 357 | -461 833 | -340 789 | -207 016 | -59 173 | 104 218 | 284 793 |
| 4 | | | | | -1 299 090 | -1 266 102 | -1 229 644 | -1 189 352 | -1 144 823 | -1 095 610 | -1 041 222 | -981 114 | -914 684 | -841 268 | -760 130 | -670 459 | -571 357 | -461 833 | -340 789 | -207 016 | -59 173 |
| 5 | | | | | | -1 328 939 | -1 299 090 | -1 266 102 | -1 229 644 | -1 189 352 | -1 144 823 | -1 095 610 | -1 041 222 | -981 114 | -914 684 | -841 268 | -760 130 | -670 459 | -571 357 | -461 833 | -340 789 |
| 6 | | | | | | | -1 355 947 | -1 328 939 | -1 299 090 | -1 266 102 | -1 229 644 | -1 189 352 | -1 144 823 | -1 095 610 | -1 041 222 | -981 114 | -914 684 | -841 268 | -760 130 | -670 459 | -571 357 |
| 7 | | | | | | | | -1 380 385 | -1 355 947 | -1 328 939 | -1 299 090 | -1 266 102 | -1 229 644 | -1 189 352 | -1 144 823 | -1 095 610 | -1 041 222 | -981 114 | -914 684 | -841 268 | -760 130 |
| 8 | | | | | | | | | -1 402 498 | -1 380 385 | -1 355 947 | -1 328 939 | -1 299 090 | -1 266 102 | -1 229 644 | -1 189 352 | -1 144 823 | -1 095 610 | -1 041 222 | -981 114 | -914 684 |
| 9 | | | | | | | | | | -1 422 506 | -1 402 498 | -1 380 385 | -1 355 947 | -1 328 939 | -1 299 090 | -1 266 102 | -1 229 644 | -1 189 352 | -1 144 823 | -1 095 610 | -1 041 222 |
| 10 | | | | | | | | | | | -1 440 610 | -1 422 506 | -1 402 498 | -1 380 385 | -1 355 947 | -1 328 939 | -1 299 090 | -1 266 102 | -1 229 644 | -1 189 352 | -1 144 823 |
| 11 | | | | | | | | | | | | -1 456 992 | -1 440 610 | -1 422 506 | -1 402 498 | -1 380 385 | -1 355 947 | -1 328 939 | -1 299 090 | -1 266 102 | -1 229 644 |
| 12 | | | | | | | | | | | | | -1 471 814 | -1 456 992 | -1 440 610 | -1 422 506 | -1 402 498 | -1 380 385 | -1 355 947 | -1 328 939 | -1 299 090 |
| 13 | | | | | | | | | | | | | | -1 485 226 | -1 471 814 | -1 456 992 | -1 440 610 | -1 422 506 | -1 402 498 | -1 380 385 | -1 355 947 |
| 14 | | | | | | | | | | | | | | | -1 497 362 | -1 485 226 | -1 471 814 | -1 456 992 | -1 440 610 | -1 422 506 | -1 402 498 |
| 15 | | | | | | | | | | | | | | | | -1 508 343 | -1 497 362 | -1 485 226 | -1 471 814 | -1 456 992 | -1 440 610 |
| | | | | | | | | | | | | | | | | | -1 518 279 | -1 508 343 | -1 497 362 | -1 485 226 | -1 471 814 |
| | | | | | | | | | | | | | | | | | | -1 527 269 | -1 518 279 | -1 508 343 | -1 497 362 |
| | | | | | | | | | | | | | | | | | | | -1 535 404 | -1 527 269 | -1 518 279 |
| | | | | | | | | | | | | | | | | | | | | -1 542 764 | -1 535 404 |
| | | | | | | | | | | | | | | | | | | | | | -1 549 424 |

## 8.6 Rate = 2% (CF, OV, PV).

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 0 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 |
| 1 | | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 |
| 2 | | | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 |
| 3 | | | | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 |
| 4 | | | | | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 |
| 5 | | | | | | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 |
| 6 | | | | | | | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 |
| 7 | | | | | | | | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 |
| 8 | | | | | | | | | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 |
| 9 | | | | | | | | | | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 |
| 10 | | | | | | | | | | | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 |
| 11 | | | | | | | | | | | | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 |
| 12 | | | | | | | | | | | | | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 |
| 13 | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 |
| 14 | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 |
| 15 | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 |
| 16 | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 |
| 17 | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 18 | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 19 | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 20 | | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 |
| 21 | | | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 |
| 22 | | | | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | 0,000 |

| 2039 | 2040 | 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 | 2060 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
| 3160006,150 | 6158170,205 | 12000945,083 | ########### | ########### | 88819173,829 | 173089406,752 | 337313909,129 | ############ | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 | 136743940915,753 | 266484437872,631 | 519320674486,359 | 1012043949365,140 | 1972255305374,900 | 3843500069353,160 |
| 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | ########### | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 | 136743940915,753 | 266484437872,631 | 519320674486,359 | 1012043949365,140 |
| 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 | 136743940915,753 | 266484437872,631 |
| 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 |
| 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 |
| 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 |
| 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 |
| 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 |
| 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 |
| 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 |
| 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 |
| 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 |
| 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 |
| 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 |
| 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 |
| 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 |
| 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 |
| 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 |
| 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 |
| | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 |
| | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 |
| | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 |
| | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 |
| | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | | | | | | 0,000 |

| Cash flow | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 703 117 | 1 117 606 | 1 925 356 | 3 499 485 | 6 567 123 | 12 545 288 | 24 195 441 | 46 899 077 | 91 143 565 | 177 366 525 | 345 396 472 | 672 850 586 | 1 310 988 005 | 2 554 580 154 | 4 978 072 943 | 9 700 937 511 | 18 904 781 581 | 36 841 087 912 | 71 795 079 132 | 139 912 866 578 | 272 659 737 663 |
| 1 | | 490 426 | 703 117 | 1 117 606 | 1 925 356 | 3 499 485 | 6 567 123 | 12 545 288 | 24 195 441 | 46 899 077 | 91 143 565 | 177 366 525 | 345 396 472 | 672 850 586 | 1 310 988 005 | 2 554 580 154 | 4 978 072 943 | 9 700 937 511 | 18 904 781 581 | 36 841 087 912 | 71 795 079 132 |
| 2 | | | 381 286 | 490 426 | 703 117 | 1 117 606 | 1 925 356 | 3 499 485 | 6 567 123 | 12 545 288 | 24 195 441 | 46 899 077 | 91 143 565 | 177 366 525 | 345 396 472 | 672 850 586 | 1 310 988 005 | 2 554 580 154 | 4 978 072 943 | 9 700 937 511 | 18 904 781 581 |
| 3 | | | | 325 282 | 381 286 | 490 426 | 703 117 | 1 117 606 | 1 925 356 | 3 499 485 | 6 567 123 | 12 545 288 | 24 195 441 | 46 899 077 | 91 143 565 | 177 366 525 | 345 396 472 | 672 850 586 | 1 310 988 005 | 2 554 580 154 | 4 978 072 943 |
| 4 | | | | | 296 544 | 325 282 | 381 286 | 490 426 | 703 117 | 1 117 606 | 1 925 356 | 3 499 485 | 6 567 123 | 12 545 288 | 24 195 441 | 46 899 077 | 91 143 565 | 177 366 525 | 345 396 472 | 672 850 586 | 1 310 988 005 |
| 5 | | | | | | 281 797 | 296 544 | 325 282 | 381 286 | 490 426 | 703 117 | 1 117 606 | 1 925 356 | 3 499 485 | 6 567 123 | 12 545 288 | 24 195 441 | 46 899 077 | 91 143 565 | 177 366 525 | 345 396 472 |
| 6 | | | | | | | 274 230 | 281 797 | 296 544 | 325 282 | 381 286 | 490 426 | 703 117 | 1 117 606 | 1 925 356 | 3 499 485 | 6 567 123 | 12 545 288 | 24 195 441 | 46 899 077 | 91 143 565 |
| 7 | | | | | | | | 270 347 | 274 230 | 281 797 | 296 544 | 325 282 | 381 286 | 490 426 | 703 117 | 1 117 606 | 1 925 356 | 3 499 485 | 6 567 123 | 12 545 288 | 24 195 441 |
| 8 | | | | | | | | | 268 354 | 270 347 | 274 230 | 281 797 | 296 544 | 325 282 | 381 286 | 490 426 | 703 117 | 1 117 606 | 1 925 356 | 3 499 485 | 6 567 123 |
| 9 | | | | | | | | | | 267 332 | 268 354 | 270 347 | 274 230 | 281 797 | 296 544 | 325 282 | 381 286 | 490 426 | 703 117 | 1 117 606 | 1 925 356 |
| 10 | | | | | | | | | | | 266 807 | 267 332 | 268 354 | 270 347 | 274 230 | 281 797 | 296 544 | 325 282 | 381 286 | 490 426 | 703 117 |
| 11 | | | | | | | | | | | | 266 538 | 266 807 | 267 332 | 268 354 | 270 347 | 274 230 | 281 797 | 296 544 | 325 282 | 381 286 |
| 12 | | | | | | | | | | | | | 266 400 | 266 538 | 266 807 | 267 332 | 268 354 | 270 347 | 274 230 | 281 797 | 296 544 |
| 13 | | | | | | | | | | | | | | 266 329 | 266 400 | 266 538 | 266 807 | 267 332 | 268 354 | 270 347 | 274 230 |
| 14 | | | | | | | | | | | | | | | 266 293 | 266 329 | 266 400 | 266 538 | 266 807 | 267 332 | 268 354 |
| 15 | | | | | | | | | | | | | | | | 266 274 | 266 293 | 266 329 | 266 400 | 266 538 | 266 807 |
| 16 | | | | | | | | | | | | | | | | | 266 264 | 266 274 | 266 293 | 266 329 | 266 400 |
| 17 | | | | | | | | | | | | | | | | | | 266 260 | 266 264 | 266 274 | 266 293 |
| 18 | | | | | | | | | | | | | | | | | | | 266 257 | 266 260 | 266 264 |
| 19 | | | | | | | | | | | | | | | | | | | | 266 256 | 266 257 |
| 20 | | | | | | | | | | | | | | | | | | | | | 266 255 |

| Option value | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 343 645 | 707 114 | 1 442 876 | 2 920 619 | 5 867 357 | 11 706 283 | 23 214 488 | 45 800 746 | 89 991 323 | 176 272 358 | 344 530 474 | 672 460 675 | 1 311 447 134 | 2 556 472 628 | 4 982 304 850 | 9 708 820 987 | 18 917 989 362 | 36 861 156 301 | 71 821 643 492 | 139 938 672 011 | 272 657 894 523 |
| 1 | | 155 796 | 327 210 | 680 557 | 1 401 835 | 2 860 386 | 5 784 097 | 11 598 881 | 23 086 304 | 45 659 439 | 89 844 075 | 176 114 577 | 344 329 746 | 672 141 449 | 1 310 874 645 | 2 555 407 669 | 4 980 281 374 | 9 704 930 966 | 18 910 463 617 | 36 846 547 782 | 71 793 235 992 |
| 2 | | | 67 011 | 144 379 | 307 740 | 648 727 | 1 352 315 | 2 787 734 | 5 684 724 | 11 473 899 | 22 943 872 | 45 513 390 | 89 704 867 | 175 972 350 | 344 138 947 | 671 820 175 | 1 310 300 164 | 2 554 340 868 | 4 978 256 389 | 9 701 040 127 | 18 902 938 441 |
| 3 | | | | 26 835 | 59 639 | 131 057 | 284 585 | 610 306 | 1 292 008 | 2 699 272 | 5 565 406 | 11 329 039 | 22 789 571 | 45 371 525 | 89 584 765 | 175 846 897 | 343 946 004 | 671 496 765 | 1 309 723 601 | 2 553 272 135 | 4 976 229 803 |
| 4 | | | | | 9 752 | 22 485 | 51 273 | 115 523 | 256 928 | 563 509 | 1 217 659 | 2 590 212 | 5 421 221 | 11 163 176 | 22 631 436 | 45 250 632 | 89 492 287 | 175 719 232 | 343 750 830 | 671 171 129 | 1 309 144 865 |
| 5 | | | | | | 3 100 | 7 461 | 17 775 | 41 879 | 97 462 | 223 729 | 505 815 | 1 124 408 | 2 453 406 | 5 246 009 | 10 979 815 | 22 491 288 | 45 174 509 | 89 397 538 | 175 589 263 | 343 553 332 |
| 6 | | | | | | | 815 | 2 059 | 5 162 | 12 822 | 31 526 | 76 611 | 183 668 | 433 464 | 1 004 343 | 2 277 227 | 5 033 382 | 10 800 372 | 22 422 982 | 45 096 061 | 89 300 425 |
| 7 | | | | | | | | 161 | 429 | 1 139 | 3 005 | 7 882 | 20 520 | 52 944 | 135 134 | 340 329 | 842 619 | 2 039 904 | 4 787 703 | 10 735 491 | 22 352 301 |
| 8 | | | | | | | | | 19 | 55 | 154 | 435 | 1 225 | 3 449 | 9 700 | 27 264 | 76 573 | 214 885 | 602 520 | 1 687 902 | 4 723 983 |
| 9 | | | | | | | | | | 1 | 2 | 6 | 17 | 49 | 142 | 409 | 1 182 | 3 413 | 9 858 | 28 469 | 82 216 |
| 10 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 17 | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 |
| 18 | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| 19 | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| 20 | | | | | | | | | | | | | | | | | | | | | 0 |

| Project value | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | -1 140 023 | -725 534 | 82 216 | 1 656 345 | 4 723 983 | 10 702 148 | 22 352 301 | 45 055 937 | 89 300 425 | 175 523 385 | 343 553 332 | 671 007 446 | 1 309 144 865 | 2 552 737 014 | 4 976 229 803 | 9 699 094 371 | 18 902 938 441 | 36 839 244 772 | 71 793 235 992 | 139 911 023 438 | 272 657 894 523 |
| 1 | | -1 352 714 | -1 140 023 | -725 534 | 82 216 | 1 656 345 | 4 723 983 | 10 702 148 | 22 352 301 | 45 055 937 | 89 300 425 | 175 523 385 | 343 553 332 | 671 007 446 | 1 309 144 865 | 2 552 737 014 | 4 976 229 803 | 9 699 094 371 | 18 902 938 441 | 36 839 244 772 | 71 793 235 992 |
| 2 | | | -1 461 854 | -1 352 714 | -1 140 023 | -725 534 | 82 216 | 1 656 345 | 4 723 983 | 10 702 148 | 22 352 301 | 45 055 937 | 89 300 425 | 175 523 385 | 343 553 332 | 671 007 446 | 1 309 144 865 | 2 552 737 014 | 4 976 229 803 | 9 699 094 371 | 18 902 938 441 |
| 3 | | | | -1 517 858 | -1 461 854 | -1 352 714 | -1 140 023 | -725 534 | 82 216 | 1 656 345 | 4 723 983 | 10 702 148 | 22 352 301 | 45 055 937 | 89 300 425 | 175 523 385 | 343 553 332 | 671 007 446 | 1 309 144 865 | 2 552 737 014 | 4 976 229 803 |
| 4 | | | | | -1 546 596 | -1 517 858 | -1 461 854 | -1 352 714 | -1 140 023 | -725 534 | 82 216 | 1 656 345 | 4 723 983 | 10 702 148 | 22 352 301 | 45 055 937 | 89 300 425 | 175 523 385 | 343 553 332 | 671 007 446 | 1 309 144 865 |
| 5 | | | | | | -1 561 343 | -1 546 596 | -1 517 858 | -1 461 854 | -1 352 714 | -1 140 023 | -725 534 | 82 216 | 1 656 345 | 4 723 983 | 10 702 148 | 22 352 301 | 45 055 937 | 89 300 425 | 175 523 385 | 343 553 332 |
| 6 | | | | | | | -1 568 910 | -1 561 343 | -1 546 596 | -1 517 858 | -1 461 854 | -1 352 714 | -1 140 023 | -725 534 | 82 216 | 1 656 345 | 4 723 983 | 10 702 148 | 22 352 301 | 45 055 937 | 89 300 425 |
| 7 | | | | | | | | -1 572 793 | -1 568 910 | -1 561 343 | -1 546 596 | -1 517 858 | -1 461 854 | -1 352 714 | -1 140 023 | -725 534 | 82 216 | 1 656 345 | 4 723 983 | 10 702 148 | 22 352 301 |
| 8 | | | | | | | | | -1 574 786 | -1 572 793 | -1 568 910 | -1 561 343 | -1 546 596 | -1 517 858 | -1 461 854 | -1 352 714 | -1 140 023 | -725 534 | 82 216 | 1 656 345 | 4 723 983 |
| 9 | | | | | | | | | | -1 575 808 | -1 574 786 | -1 572 793 | -1 568 910 | -1 561 343 | -1 546 596 | -1 517 858 | -1 461 854 | -1 352 714 | -1 140 023 | -725 534 | 82 216 |
| 10 | | | | | | | | | | | -1 576 333 | -1 575 808 | -1 574 786 | -1 572 793 | -1 568 910 | -1 561 343 | -1 546 596 | -1 517 858 | -1 461 854 | -1 352 714 | -1 140 023 |
| 11 | | | | | | | | | | | | -1 576 602 | -1 576 333 | -1 575 808 | -1 574 786 | -1 572 793 | -1 568 910 | -1 561 343 | -1 546 596 | -1 517 858 | -1 461 854 |
| 12 | | | | | | | | | | | | | -1 576 740 | -1 576 602 | -1 576 333 | -1 575 808 | -1 574 786 | -1 572 793 | -1 568 910 | -1 561 343 | -1 546 596 |
| 13 | | | | | | | | | | | | | | -1 576 811 | -1 576 740 | -1 576 602 | -1 576 333 | -1 575 808 | -1 574 786 | -1 572 793 | -1 568 910 |
| 14 | | | | | | | | | | | | | | | -1 576 847 | -1 576 811 | -1 576 740 | -1 576 602 | -1 576 333 | -1 575 808 | -1 574 786 |
| 15 | | | | | | | | | | | | | | | | -1 576 866 | -1 576 847 | -1 576 811 | -1 576 740 | -1 576 602 | -1 576 333 |
| | | | | | | | | | | | | | | | | | -1 576 876 | -1 576 866 | -1 576 847 | -1 576 811 | -1 576 740 |
| | | | | | | | | | | | | | | | | | | -1 576 880 | -1 576 876 | -1 576 866 | -1 576 847 |
| | | | | | | | | | | | | | | | | | | | -1 576 883 | -1 576 880 | -1 576 876 |
| | | | | | | | | | | | | | | | | | | | | -1 576 884 | -1 576 883 |
| | | | | | | | | | | | | | | | | | | | | | -1 576 885 |

## 8.7 Rate = 6 % (CF, OV, PV).

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| 0 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 |
| 1 | | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 |
| 2 | | | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 |
| 3 | | | | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 |
| 4 | | | | | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 |
| 5 | | | | | | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 |
| 6 | | | | | | | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 |
| 7 | | | | | | | | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 |
| 8 | | | | | | | | | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 |
| 9 | | | | | | | | | | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 |
| 10 | | | | | | | | | | | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 |
| 11 | | | | | | | | | | | | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 |
| 12 | | | | | | | | | | | | | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 |
| 13 | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 |
| 14 | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 |
| 15 | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 |
| 16 | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 |
| 17 | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 |
| 18 | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 19 | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 20 | | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| 21 | | | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 |
| 22 | | | | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | 0,000 | 0,000 |
| 24 | | | | | | | | | | | | | | | | | | | | | | | | | 0,000 |

| 2041 | 2042 | 2043 | 2044 | 2045 | 2046 | 2047 | 2048 | 2049 | 2050 | 2051 | 2052 | 2053 | 2054 | 2055 | 2056 | 2057 | 2058 | 2059 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 |
| 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 | 136743940915,753 | 266484437872,631 | 519320674486,359 | 1012043949365,140 | 1972255305374,900 |
| 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 | 136743940915,753 | 266484437872,631 | 519320674486,359 |
| 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 | 70168845604,817 | 136743940915,753 |
| 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 | 18476376830,177 | 36006472100,625 |
| 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 | 4865072210,156 | 9480976081,652 |
| 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 | 1281037284,938 | 2496465280,177 |
| 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 | 337313909,129 | 657352032,265 |
| 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 | 88819173,829 | 173089406,752 |
| 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 | 23387252,722 | 45576709,676 |
| 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 | 6158170,205 | 12000945,083 |
| 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 | 1621526,937 | 3160006,150 |
| 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 | 426969,298 | 832071,041 |
| 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 | 112426,613 | 219095,212 |
| 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 | 29603,401 | 57690,641 |
| 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 | 7794,963 | 15190,702 |
| 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 | 2052,516 | 3999,911 |
| 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 | 540,454 | 1053,229 |
| 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 | 142,309 | 277,329 |
| 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 | 37,472 | 73,024 |
| 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 | 9,867 | 19,228 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 | 2,598 | 5,063 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 | 0,684 | 1,333 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 | 0,180 | 0,351 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 | 0,047 | 0,092 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 | 0,012 | 0,024 |
| 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 | 0,003 | 0,006 |
| | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,001 | 0,002 |
| | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | 0,000 | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | | 0,000 | 0,000 |
| | | | | | | | | | | | | | | | | | | 0,000 |

**Cash flow** (2016–2026)

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 0 | 643 696 | 1 063 480 | 1 881 549 | 3 475 790 | 6 582 620 | 12 637 162 | 24 436 159 | 47 429 857 | 92 239 615 | 179 564 164 | 349 740 871 |
| 1 | | 428 287 | 643 696 | 1 063 480 | 1 881 549 | 3 475 790 | 6 582 620 | 12 637 162 | 24 436 159 | 47 429 857 | 92 239 615 |
| 2 | | | 317 753 | 428 287 | 643 696 | 1 063 480 | 1 881 549 | 3 475 790 | 6 582 620 | 12 637 162 | 24 436 159 |
| 3 | | | | 261 033 | 317 753 | 428 287 | 643 696 | 1 063 480 | 1 881 549 | 3 475 790 | 6 582 620 |
| 4 | | | | | 231 927 | 261 033 | 317 753 | 428 287 | 643 696 | 1 063 480 | 1 881 549 |
| 5 | | | | | | 216 992 | 231 927 | 261 033 | 317 753 | 428 287 | 643 696 |
| 6 | | | | | | | 209 329 | 216 992 | 231 927 | 261 033 | 317 753 |
| 7 | | | | | | | | 205 396 | 209 329 | 216 992 | 231 927 |
| 8 | | | | | | | | | 203 378 | 205 396 | 209 329 |
| 9 | | | | | | | | | | 202 343 | 203 378 |
| 10 | | | | | | | | | | | 201 811 |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | |
| 16 | | | | | | | | | | | |
| 17 | | | | | | | | | | | |
| 18 | | | | | | | | | | | |
| 19 | | | | | | | | | | | |
| 20 | | | | | | | | | | | |

**Cash flow** (2027–2036)

| | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 681 378 556 | 1 327 668 852 | 2 587 149 199 | 5 041 604 659 | 9 824 808 793 | 19 146 241 657 | 37 311 703 178 | 72 712 268 423 | 141 700 332 292 | 276 143 184 363 |
| 1 | 179 564 164 | 349 740 871 | 681 378 556 | 1 327 668 852 | 2 587 149 199 | 5 041 604 659 | 9 824 808 793 | 19 146 241 657 | 37 311 703 178 | 72 712 268 423 |
| 2 | 47 429 857 | 92 239 615 | 179 564 164 | 349 740 871 | 681 378 556 | 1 327 668 852 | 2 587 149 199 | 5 041 604 659 | 9 824 808 793 | 19 146 241 657 |
| 3 | 12 637 162 | 24 436 159 | 47 429 857 | 92 239 615 | 179 564 164 | 349 740 871 | 681 378 556 | 1 327 668 852 | 2 587 149 199 | 5 041 604 659 |
| 4 | 3 475 790 | 6 582 620 | 12 637 162 | 24 436 159 | 47 429 857 | 92 239 615 | 179 564 164 | 349 740 871 | 681 378 556 | 1 327 668 852 |
| 5 | 1 063 480 | 1 881 549 | 3 475 790 | 6 582 620 | 12 637 162 | 24 436 159 | 47 429 857 | 92 239 615 | 179 564 164 | 349 740 871 |
| 6 | 428 287 | 643 696 | 1 063 480 | 1 881 549 | 3 475 790 | 6 582 620 | 12 637 162 | 24 436 159 | 47 429 857 | 92 239 615 |
| 7 | 261 033 | 317 753 | 428 287 | 643 696 | 1 063 480 | 1 881 549 | 3 475 790 | 6 582 620 | 12 637 162 | 24 436 159 |
| 8 | 216 992 | 231 927 | 261 033 | 317 753 | 428 287 | 643 696 | 1 063 480 | 1 881 549 | 3 475 790 | 6 582 620 |
| 9 | 205 396 | 209 329 | 216 992 | 231 927 | 261 033 | 317 753 | 428 287 | 643 696 | 1 063 480 | 1 881 549 |
| 10 | 202 343 | 203 378 | 205 396 | 209 329 | 216 992 | 231 927 | 261 033 | 317 753 | 428 287 | 643 696 |
| 11 | 201 538 | 201 811 | 202 343 | 203 378 | 205 396 | 209 329 | 216 992 | 231 927 | 261 033 | 317 753 |
| 12 | | 201 399 | 201 538 | 201 811 | 202 343 | 203 378 | 205 396 | 209 329 | 216 992 | 231 927 |
| 13 | | | 201 327 | 201 399 | 201 538 | 201 811 | 202 343 | 203 378 | 205 396 | 209 329 |
| 14 | | | | 201 290 | 201 327 | 201 399 | 201 538 | 201 811 | 202 343 | 203 378 |
| 15 | | | | | 201 271 | 201 290 | 201 327 | 201 399 | 201 538 | 201 811 |
| 16 | | | | | | 201 261 | 201 271 | 201 290 | 201 327 | 201 399 |
| 17 | | | | | | | 201 256 | 201 261 | 201 271 | 201 290 |
| 18 | | | | | | | | 201 254 | 201 256 | 201 261 |
| 19 | | | | | | | | | 201 252 | 201 254 |
| 20 | | | | | | | | | | 201 252 |

**Option value** (2016–2026)

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 0 | 387 678 | 783 979 | 1 575 190 | 3 145 818 | 6 247 854 | 12 347 916 | 24 301 147 | 47 660 296 | 93 220 741 | 181 971 683 | 354 731 751 |
| 1 | | 180 164 | 370 647 | 756 525 | 1 532 308 | 3 080 928 | 6 152 445 | 12 210 460 | 24 103 725 | 47 369 797 | 92 769 144 |
| 2 | | | 79 822 | 167 927 | 350 071 | 723 094 | 1 479 996 | 3 002 264 | 6 038 737 | 12 051 446 | 23 884 675 |
| 3 | | | | 33 069 | 71 555 | 153 304 | 325 075 | 682 003 | 1 415 372 | 2 905 540 | 5 901 420 |
| 4 | | | | | 12 472 | 27 931 | 61 929 | 135 837 | 294 551 | 630 962 | 1 334 367 |
| 5 | | | | | | 4 120 | 9 612 | 22 220 | 50 844 | 115 041 | 257 090 |
| 6 | | | | | | | 1 122 | 2 746 | 6 671 | 16 068 | 38 337 |
| 7 | | | | | | | | 226 | 585 | 1 505 | 3 852 |
| 8 | | | | | | | | | 26 | 73 | 199 |
| 9 | | | | | | | | | | 1 | 1 |
| 10 | | | | | | | | | | | 0 |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | |
| 16 | | | | | | | | | | | |
| 17 | | | | | | | | | | | |
| 18 | | | | | | | | | | | |
| 19 | | | | | | | | | | | |
| 20 | | | | | | | | | | | |

**Option value** (2027–2036)

| | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 690 901 200 | 1 344 949 092 | 2 617 394 410 | 5 092 881 614 | 9 908 786 197 | 19 277 774 153 | 37 504 396 299 | 72 962 784 727 | 141 944 090 472 | 276 141 341 223 |
| 1 | 181 216 716 | 353 383 834 | 688 389 832 | 1 340 169 796 | 2 608 209 439 | 5 075 132 547 | 9 874 383 590 | 19 210 981 122 | 37 374 598 551 | 72 710 425 283 |
| 2 | 47 062 016 | 92 307 675 | 180 457 641 | 352 031 584 | 685 871 882 | 1 335 390 842 | 2 599 039 066 | 5 057 426 647 | 9 840 080 617 | 19 144 398 517 |
| 3 | 11 866 013 | 23 642 079 | 46 739 840 | 91 841 840 | 179 695 205 | 350 667 830 | 683 345 486 | 1 330 610 227 | 2 589 881 119 | 5 039 761 519 |
| 4 | 2 784 653 | 5 733 341 | 11 649 089 | 23 377 486 | 46 412 251 | 91 377 353 | 178 918 256 | 349 290 612 | 680 808 555 | 1 325 825 712 |
| 5 | 566 761 | 1 230 933 | 2 630 469 | 5 524 838 | 11 397 771 | 23 102 772 | 46 095 954 | 90 896 294 | 178 124 724 | 347 897 731 |
| 6 | 90 484 | 210 925 | 484 679 | 1 095 379 | 2 428 203 | 5 263 588 | 11 122 101 | 22 857 683 | 45 761 482 | 90 396 475 |
| 7 | 9 801 | 24 764 | 62 055 | 153 950 | 377 230 | 909 960 | 2 150 501 | 4 942 225 | 10 908 506 | 22 593 019 |
| 8 | 546 | 1 496 | 4 099 | 11 232 | 30 774 | 84 300 | 230 892 | 632 297 | 1 731 260 | 4 739 480 |
| 9 | 4 | 11 | 30 | 84 | 234 | 649 | 1 800 | 4 993 | 13 849 | 38 409 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | | | | | | 0 | 0 | 0 | 0 | 0 |
| 17 | | | | | | | 0 | 0 | 0 | 0 |
| 18 | | | | | | | | 0 | 0 | 0 |
| 19 | | | | | | | | | 0 | 0 |
| 20 | | | | | | | | | | 0 |

**Project value** (2016–2026)

| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 0 | -1 199 444 | -779 660 | 38 409 | 1 632 650 | 4 739 480 | 10 794 022 | 22 593 019 | 45 586 717 | 90 396 475 | 177 721 024 | 347 897 731 |
| 1 | | -1 414 853 | -1 199 444 | -779 660 | 38 409 | 1 632 650 | 4 739 480 | 10 794 022 | 22 593 019 | 45 586 717 | 90 396 475 |
| 2 | | | -1 525 387 | -1 414 853 | -1 199 444 | -779 660 | 38 409 | 1 632 650 | 4 739 480 | 10 794 022 | 22 593 019 |
| 3 | | | | -1 582 107 | -1 525 387 | -1 414 853 | -1 199 444 | -779 660 | 38 409 | 1 632 650 | 4 739 480 |
| 4 | | | | | -1 611 213 | -1 582 107 | -1 525 387 | -1 414 853 | -1 199 444 | -779 660 | 38 409 |
| 5 | | | | | | -1 626 148 | -1 611 213 | -1 582 107 | -1 525 387 | -1 414 853 | -1 199 444 |
| 6 | | | | | | | -1 633 811 | -1 626 148 | -1 611 213 | -1 582 107 | -1 525 387 |
| 7 | | | | | | | | -1 637 744 | -1 633 811 | -1 626 148 | -1 611 213 |
| 8 | | | | | | | | | -1 639 762 | -1 637 744 | -1 633 811 |
| 9 | | | | | | | | | | -1 640 797 | -1 639 762 |
| 10 | | | | | | | | | | | -1 641 329 |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | |

**Project value** (2027–2036)

| | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 679 535 416 | 1 325 825 712 | 2 585 306 059 | 5 039 761 519 | 9 822 965 653 | 19 144 398 517 | 37 309 860 038 | 72 710 425 283 | 141 698 489 152 | 276 141 341 223 |
| 1 | 177 721 024 | 347 897 731 | 679 535 416 | 1 325 825 712 | 2 585 306 059 | 5 039 761 519 | 9 822 965 653 | 19 144 398 517 | 37 309 860 038 | 72 710 425 283 |
| 2 | 45 586 717 | 90 396 475 | 177 721 024 | 347 897 731 | 679 535 416 | 1 325 825 712 | 2 585 306 059 | 5 039 761 519 | 9 822 965 653 | 19 144 398 517 |
| 3 | 10 794 022 | 22 593 019 | 45 586 717 | 90 396 475 | 177 721 024 | 347 897 731 | 679 535 416 | 1 325 825 712 | 2 585 306 059 | 5 039 761 519 |
| 4 | 1 632 650 | 4 739 480 | 10 794 022 | 22 593 019 | 45 586 717 | 90 396 475 | 177 721 024 | 347 897 731 | 679 535 416 | 1 325 825 712 |
| 5 | -779 660 | 38 409 | 1 632 650 | 4 739 480 | 10 794 022 | 22 593 019 | 45 586 717 | 90 396 475 | 177 721 024 | 347 897 731 |
| 6 | -1 414 853 | -1 199 444 | -779 660 | 38 409 | 1 632 650 | 4 739 480 | 10 794 022 | 22 593 019 | 45 586 717 | 90 396 475 |
| 7 | -1 582 107 | -1 525 387 | -1 414 853 | -1 199 444 | -779 660 | 38 409 | 1 632 650 | 4 739 480 | 10 794 022 | 22 593 019 |
| 8 | -1 626 148 | -1 611 213 | -1 582 107 | -1 525 387 | -1 414 853 | -1 199 444 | -779 660 | 38 409 | 1 632 650 | 4 739 480 |
| 9 | -1 637 744 | -1 633 811 | -1 626 148 | -1 611 213 | -1 582 107 | -1 525 387 | -1 414 853 | -1 199 444 | -779 660 | 38 409 |
| 10 | -1 640 797 | -1 639 762 | -1 637 744 | -1 633 811 | -1 626 148 | -1 611 213 | -1 582 107 | -1 525 387 | -1 414 853 | -1 199 444 |
| 11 | -1 641 602 | -1 641 329 | -1 640 797 | -1 639 762 | -1 637 744 | -1 633 811 | -1 626 148 | -1 611 213 | -1 582 107 | -1 525 387 |
| 12 | | -1 641 741 | -1 641 602 | -1 641 329 | -1 640 797 | -1 639 762 | -1 637 744 | -1 633 811 | -1 626 148 | -1 611 213 |
| 13 | | | -1 641 813 | -1 641 741 | -1 641 602 | -1 641 329 | -1 640 797 | -1 639 762 | -1 637 744 | -1 633 811 |
| 14 | | | | -1 641 850 | -1 641 813 | -1 641 741 | -1 641 602 | -1 641 329 | -1 640 797 | -1 639 762 |
| 15 | | | | | -1 641 869 | -1 641 850 | -1 641 813 | -1 641 741 | -1 641 602 | -1 641 329 |
| | | | | | | -1 641 879 | -1 641 869 | -1 641 850 | -1 641 813 | -1 641 741 |
| | | | | | | | -1 641 884 | -1 641 879 | -1 641 869 | -1 641 850 |
| | | | | | | | | -1 641 886 | -1 641 884 | -1 641 879 |
| | | | | | | | | | -1 641 888 | -1 641 886 |
| | | | | | | | | | | -1 641 888 |

## 8.8 Investment cost – 15 %, same price tree as base case (CF, OV, PV).

| *Cash flow* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 | 37 015 118 848 | 72 134 261 908 | 140 573 894 657 | 273 947 972 799 |
| 1 | | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 | 37 015 118 848 | 72 134 261 908 |
| 2 | | | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 |
| 3 | | | | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 |
| 4 | | | | | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 |
| 5 | | | | | | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 |
| 6 | | | | | | | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 |
| 7 | | | | | | | | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 |
| 8 | | | | | | | | | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 |
| 9 | | | | | | | | | | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 |
| 10 | | | | | | | | | | | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 |
| 11 | | | | | | | | | | | | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 |
| 12 | | | | | | | | | | | | | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 |
| 13 | | | | | | | | | | | | | | 230 463 | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 |
| 14 | | | | | | | | | | | | | | | 230 427 | 230 463 | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 |
| 15 | | | | | | | | | | | | | | | | 230 408 | 230 427 | 230 463 | 230 535 | 230 673 | 230 944 |
| 16 | | | | | | | | | | | | | | | | | 230 398 | 230 408 | 230 427 | 230 463 | 230 535 |
| 17 | | | | | | | | | | | | | | | | | | 230 393 | 230 398 | 230 408 | 230 427 |
| 18 | | | | | | | | | | | | | | | | | | | 230 391 | 230 393 | 230 398 |
| 19 | | | | | | | | | | | | | | | | | | | | 230 390 | 230 391 |
| 20 | | | | | | | | | | | | | | | | | | | | | 230 389 |

| *Option value* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 373 268 | 757 509 | 1 526 778 | 3 057 488 | 6 086 783 | 12 053 883 | 23 763 207 | 46 673 491 | 91 406 194 | 178 630 144 | 348 577 184 | 679 579 501 | 1 324 173 967 | 2 579 405 039 | 5 023 709 482 | 9 783 457 702 | 19 051 992 743 | 37 100 337 391 | 72 245 309 915 | 140 681 969 286 | 273 946 406 130 |
| 1 | | 173 573 | 358 357 | 733 766 | 1 490 383 | 3 003 957 | 6 011 349 | 11 951 786 | 23 628 919 | 46 496 929 | 91 162 785 | 178 260 757 | 347 953 057 | 678 443 079 | 1 322 030 556 | 2 575 303 534 | 5 015 797 939 | 9 768 130 005 | 19 022 226 949 | 37 042 460 032 | 72 132 695 239 |
| 2 | | | 77 163 | 162 853 | 340 464 | 705 028 | 1 446 195 | 2 939 249 | 5 921 503 | 11 833 572 | 23 480 038 | 46 311 337 | 90 918 079 | 177 894 877 | 347 329 973 | 677 302 056 | 1 319 883 858 | 2 571 201 526 | 5 007 891 550 | 9 752 818 726 | 18 992 499 761 |
| 3 | | | | 32 245 | 69 933 | 150 130 | 318 888 | 669 970 | 1 392 003 | 2 860 206 | 5 813 635 | 11 696 609 | 23 317 063 | 46 121 575 | 90 678 533 | 177 533 388 | 346 701 234 | 676 155 919 | 1 317 733 337 | 2 567 098 454 | 4 999 989 723 |
| 4 | | | | | 12 382 | 27 750 | 61 551 | 135 024 | 292 732 | 626 792 | 1 324 712 | 2 762 425 | 5 683 126 | 11 538 895 | 23 144 231 | 45 937 746 | 90 449 493 | 177 165 570 | 346 066 309 | 675 004 114 | 1 315 578 414 |
| 5 | | | | | | 4 233 | 9 861 | 22 745 | 51 912 | 117 106 | 260 838 | 572 965 | 1 239 767 | 2 639 472 | 5 524 224 | 11 361 522 | 22 975 050 | 45 774 871 | 90 213 643 | 176 790 873 | 345 424 621 |
| 6 | | | | | | | 1 231 | 2 996 | 7 234 | 17 307 | 40 983 | 95 941 | 221 691 | 504 736 | 1 129 929 | 2 481 254 | 5 330 871 | 11 177 977 | 22 844 283 | 45 604 796 | 89 970 410 |
| 7 | | | | | | | | 283 | 723 | 1 838 | 4 642 | 11 637 | 28 929 | 71 219 | 173 327 | 416 068 | 982 124 | 2 269 972 | 5 105 047 | 11 061 782 | 22 705 968 |
| 8 | | | | | | | | | 45 | 121 | 325 | 870 | 2 323 | 6 182 | 16 383 | 43 220 | 113 417 | 295 805 | 765 930 | 1 966 154 | 4 994 358 |
| 9 | | | | | | | | | | 4 | 10 | 28 | 80 | 228 | 644 | 1 823 | 5 158 | 14 596 | 41 300 | 116 859 | 330 660 |
| 10 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 17 | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 |
| 18 | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| 19 | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| 20 | | | | | | | | | | | | | | | | | | | | | 0 |

| *Project value* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | -897 354 | -480 906 | 330 660 | 1 912 226 | 4 994 358 | 11 000 769 | 22 705 968 | 45 516 874 | 89 970 410 | 176 600 760 | 345 424 621 | 674 425 901 | 1 315 578 414 | 2 565 046 330 | 4 999 989 723 | 9 745 169 047 | 18 992 499 761 | 37 013 552 179 | 72 132 695 239 | 140 572 327 988 | 273 946 406 130 |
| 1 | | -1 111 049 | -897 354 | -480 906 | 330 660 | 1 912 226 | 4 994 358 | 11 000 769 | 22 705 968 | 45 516 874 | 89 970 410 | 176 600 760 | 345 424 621 | 674 425 901 | 1 315 578 414 | 2 565 046 330 | 4 999 989 723 | 9 745 169 047 | 18 992 499 761 | 37 013 552 179 | 72 132 695 239 |
| 2 | | | -1 220 705 | -1 111 049 | -897 354 | -480 906 | 330 660 | 1 912 226 | 4 994 358 | 11 000 769 | 22 705 968 | 45 516 874 | 89 970 410 | 176 600 760 | 345 424 621 | 674 425 901 | 1 315 578 414 | 2 565 046 330 | 4 999 989 723 | 9 745 169 047 | 18 992 499 761 |
| 3 | | | | -1 276 974 | -1 220 705 | -1 111 049 | -897 354 | -480 906 | 330 660 | 1 912 226 | 4 994 358 | 11 000 769 | 22 705 968 | 45 516 874 | 89 970 410 | 176 600 760 | 345 424 621 | 674 425 901 | 1 315 578 414 | 2 565 046 330 | 4 999 989 723 |
| 4 | | | | | -1 305 848 | -1 276 974 | -1 220 705 | -1 111 049 | -897 354 | -480 906 | 330 660 | 1 912 226 | 4 994 358 | 11 000 769 | 22 705 968 | 45 516 874 | 89 970 410 | 176 600 760 | 345 424 621 | 674 425 901 | 1 315 578 414 |
| 5 | | | | | | -1 320 665 | -1 305 848 | -1 276 974 | -1 220 705 | -1 111 049 | -897 354 | -480 906 | 330 660 | 1 912 226 | 4 994 358 | 11 000 769 | 22 705 968 | 45 516 874 | 89 970 410 | 176 600 760 | 345 424 621 |
| 6 | | | | | | | -1 328 268 | -1 320 665 | -1 305 848 | -1 276 974 | -1 220 705 | -1 111 049 | -897 354 | -480 906 | 330 660 | 1 912 226 | 4 994 358 | 11 000 769 | 22 705 968 | 45 516 874 | 89 970 410 |
| 7 | | | | | | | | -1 332 169 | -1 328 268 | -1 320 665 | -1 305 848 | -1 276 974 | -1 220 705 | -1 111 049 | -897 354 | -480 906 | 330 660 | 1 912 226 | 4 994 358 | 11 000 769 | 22 705 968 |
| 8 | | | | | | | | | -1 334 171 | -1 332 169 | -1 328 268 | -1 320 665 | -1 305 848 | -1 276 974 | -1 220 705 | -1 111 049 | -897 354 | -480 906 | 330 660 | 1 912 226 | 4 994 358 |
| 9 | | | | | | | | | | -1 335 198 | -1 334 171 | -1 332 169 | -1 328 268 | -1 320 665 | -1 305 848 | -1 276 974 | -1 220 705 | -1 111 049 | -897 354 | -480 906 | 330 660 |
| 10 | | | | | | | | | | | -1 335 725 | -1 335 198 | -1 334 171 | -1 332 169 | -1 328 268 | -1 320 665 | -1 305 848 | -1 276 974 | -1 220 705 | -1 111 049 | -897 354 |
| 11 | | | | | | | | | | | | -1 335 996 | -1 335 725 | -1 335 198 | -1 334 171 | -1 332 169 | -1 328 268 | -1 320 665 | -1 305 848 | -1 276 974 | -1 220 705 |
| 12 | | | | | | | | | | | | | -1 336 134 | -1 335 996 | -1 335 725 | -1 335 198 | -1 334 171 | -1 332 169 | -1 328 268 | -1 320 665 | -1 305 848 |
| 13 | | | | | | | | | | | | | | -1 336 206 | -1 336 134 | -1 335 996 | -1 335 725 | -1 335 198 | -1 334 171 | -1 332 169 | -1 328 268 |
| 14 | | | | | | | | | | | | | | | -1 336 242 | -1 336 206 | -1 336 134 | -1 335 996 | -1 335 725 | -1 335 198 | -1 334 171 |
| 15 | | | | | | | | | | | | | | | | -1 336 261 | -1 336 242 | -1 336 206 | -1 336 134 | -1 335 996 | -1 335 725 |
| | | | | | | | | | | | | | | | | | -1 336 271 | -1 336 261 | -1 336 242 | -1 336 206 | -1 336 134 |
| | | | | | | | | | | | | | | | | | | -1 336 276 | -1 336 271 | -1 336 261 | -1 336 242 |
| | | | | | | | | | | | | | | | | | | | -1 336 278 | -1 336 276 | -1 336 271 |
| | | | | | | | | | | | | | | | | | | | | -1 336 279 | -1 336 278 |
| | | | | | | | | | | | | | | | | | | | | | -1 336 280 |

## 8.9 Investment cost – 30 %, same price tree as base case (CF, OV, PV).

| *Cash flow* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 | 37 015 118 848 | 72 134 261 908 | 140 573 894 657 | 273 947 972 799 |
| 1 | | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 | 37 015 118 848 | 72 134 261 908 |
| 2 | | | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 |
| 3 | | | | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 |
| 4 | | | | | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 |
| 5 | | | | | | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 |
| 6 | | | | | | | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 |
| 7 | | | | | | | | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 |
| 8 | | | | | | | | | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 |
| 9 | | | | | | | | | | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 |
| 10 | | | | | | | | | | | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 |
| 11 | | | | | | | | | | | | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 |
| 12 | | | | | | | | | | | | | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 |
| 13 | | | | | | | | | | | | | | 230 463 | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 |
| 14 | | | | | | | | | | | | | | | 230 427 | 230 463 | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 |
| 15 | | | | | | | | | | | | | | | | 230 408 | 230 427 | 230 463 | 230 535 | 230 673 | 230 944 |
| 16 | | | | | | | | | | | | | | | | | 230 398 | 230 408 | 230 427 | 230 463 | 230 535 |
| 17 | | | | | | | | | | | | | | | | | | 230 393 | 230 398 | 230 408 | 230 427 |
| 18 | | | | | | | | | | | | | | | | | | | 230 391 | 230 393 | 230 398 |
| 19 | | | | | | | | | | | | | | | | | | | | 230 390 | 230 391 |
| 20 | | | | | | | | | | | | | | | | | | | | | 230 389 |

| *Option value* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 382 629 | 772 830 | 1 551 028 | 3 094 476 | 6 140 917 | 12 129 579 | 23 863 884 | 46 800 380 | 91 557 473 | 178 801 137 | 348 762 045 | 679 773 746 | 1 324 375 982 | 2 579 615 134 | 5 023 927 981 | 9 783 684 941 | 19 052 229 072 | 37 100 583 173 | 72 245 565 528 | 140 682 235 123 | 273 946 682 601 |
| 1 | | 180 063 | 369 457 | 752 148 | 1 519 744 | 3 048 985 | 6 077 315 | 12 043 597 | 23 749 658 | 46 646 318 | 91 336 533 | 178 451 857 | 348 155 071 | 678 653 174 | 1 322 249 055 | 2 575 530 773 | 5 016 034 267 | 9 768 375 787 | 19 022 482 562 | 37 042 725 870 | 72 132 971 710 |
| 2 | | | 81 384 | 170 422 | 353 628 | 727 141 | 1 481 902 | 2 994 367 | 6 002 310 | 11 945 298 | 23 624 720 | 46 485 989 | 91 114 922 | 178 104 972 | 347 548 472 | 677 529 295 | 1 320 120 187 | 2 571 447 308 | 5 008 147 162 | 9 753 084 563 | 18 992 776 232 |
| 3 | | | | 34 787 | 74 730 | 158 926 | 334 499 | 696 655 | 1 435 678 | 2 928 154 | 5 913 274 | 11 833 025 | 23 489 865 | 46 323 166 | 90 897 032 | 177 760 627 | 346 937 563 | 676 401 701 | 1 317 988 950 | 2 567 364 291 | 5 000 266 194 |
| 4 | | | | | 13 775 | 30 526 | 66 943 | 145 186 | 311 232 | 659 124 | 1 378 541 | 2 846 993 | 5 807 025 | 11 705 894 | 23 348 746 | 46 164 985 | 90 685 821 | 177 411 352 | 346 321 922 | 675 269 952 | 1 315 854 885 |
| 5 | | | | | | 4 911 | 11 293 | 25 706 | 57 871 | 128 738 | 282 720 | 612 335 | 1 306 826 | 2 746 159 | 5 679 982 | 11 565 766 | 23 211 379 | 46 020 652 | 90 469 256 | 177 056 711 | 345 701 092 |
| 6 | | | | | | | 1 513 | 3 631 | 8 638 | 20 346 | 47 394 | 109 044 | 247 459 | 553 007 | 1 214 846 | 2 618 684 | 5 529 388 | 11 423 759 | 23 099 896 | 45 870 634 | 90 246 881 |
| 7 | | | | | | | | 377 | 951 | 2 381 | 5 914 | 14 563 | 35 501 | 85 540 | 203 353 | 475 838 | 1 092 745 | 2 453 577 | 5 360 660 | 11 327 620 | 22 982 439 |
| 8 | | | | | | | | | 68 | 180 | 478 | 1 262 | 3 317 | 8 665 | 22 484 | 57 859 | 147 416 | 371 007 | 919 299 | 2 231 992 | 5 270 829 |
| 9 | | | | | | | | | | 7 | 18 | 52 | 148 | 418 | 1 183 | 3 347 | 9 471 | 26 800 | 75 831 | 214 568 | 607 131 |
| 10 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 17 | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 |
| 18 | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| 19 | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| 20 | | | | | | | | | | | | | | | | | | | | | 0 |

| *Project value* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | -620 883 | -204 435 | 607 131 | 2 188 697 | 5 270 829 | 11 277 240 | 22 982 439 | 45 793 345 | 90 246 881 | 176 877 231 | 345 701 092 | 674 702 372 | 1 315 854 885 | 2 565 322 801 | 5 000 266 194 | 9 745 445 518 | 18 992 776 232 | 37 013 828 650 | 72 132 971 710 | 140 572 604 459 | 273 946 682 601 |
| 1 | | -834 578 | -620 883 | -204 435 | 607 131 | 2 188 697 | 5 270 829 | 11 277 240 | 22 982 439 | 45 793 345 | 90 246 881 | 176 877 231 | 345 701 092 | 674 702 372 | 1 315 854 885 | 2 565 322 801 | 5 000 266 194 | 9 745 445 518 | 18 992 776 232 | 37 013 828 650 | 72 132 971 710 |
| 2 | | | -944 234 | -834 578 | -620 883 | -204 435 | 607 131 | 2 188 697 | 5 270 829 | 11 277 240 | 22 982 439 | 45 793 345 | 90 246 881 | 176 877 231 | 345 701 092 | 674 702 372 | 1 315 854 885 | 2 565 322 801 | 5 000 266 194 | 9 745 445 518 | 18 992 776 232 |
| 3 | | | | -1 000 503 | -944 234 | -834 578 | -620 883 | -204 435 | 607 131 | 2 188 697 | 5 270 829 | 11 277 240 | 22 982 439 | 45 793 345 | 90 246 881 | 176 877 231 | 345 701 092 | 674 702 372 | 1 315 854 885 | 2 565 322 801 | 5 000 266 194 |
| 4 | | | | | -1 029 377 | -1 000 503 | -944 234 | -834 578 | -620 883 | -204 435 | 607 131 | 2 188 697 | 5 270 829 | 11 277 240 | 22 982 439 | 45 793 345 | 90 246 881 | 176 877 231 | 345 701 092 | 674 702 372 | 1 315 854 885 |
| 5 | | | | | | -1 044 194 | -1 029 377 | -1 000 503 | -944 234 | -834 578 | -620 883 | -204 435 | 607 131 | 2 188 697 | 5 270 829 | 11 277 240 | 22 982 439 | 45 793 345 | 90 246 881 | 176 877 231 | 345 701 092 |
| 6 | | | | | | | -1 051 797 | -1 044 194 | -1 029 377 | -1 000 503 | -944 234 | -834 578 | -620 883 | -204 435 | 607 131 | 2 188 697 | 5 270 829 | 11 277 240 | 22 982 439 | 45 793 345 | 90 246 881 |
| 7 | | | | | | | | -1 055 698 | -1 051 797 | -1 044 194 | -1 029 377 | -1 000 503 | -944 234 | -834 578 | -620 883 | -204 435 | 607 131 | 2 188 697 | 5 270 829 | 11 277 240 | 22 982 439 |
| 8 | | | | | | | | | -1 057 700 | -1 055 698 | -1 051 797 | -1 044 194 | -1 029 377 | -1 000 503 | -944 234 | -834 578 | -620 883 | -204 435 | 607 131 | 2 188 697 | 5 270 829 |
| 9 | | | | | | | | | | -1 058 727 | -1 057 700 | -1 055 698 | -1 051 797 | -1 044 194 | -1 029 377 | -1 000 503 | -944 234 | -834 578 | -620 883 | -204 435 | 607 131 |
| 10 | | | | | | | | | | | -1 059 254 | -1 058 727 | -1 057 700 | -1 055 698 | -1 051 797 | -1 044 194 | -1 029 377 | -1 000 503 | -944 234 | -834 578 | -620 883 |
| 11 | | | | | | | | | | | | -1 059 525 | -1 059 254 | -1 058 727 | -1 057 700 | -1 055 698 | -1 051 797 | -1 044 194 | -1 029 377 | -1 000 503 | -944 234 |
| 12 | | | | | | | | | | | | | -1 059 663 | -1 059 525 | -1 059 254 | -1 058 727 | -1 057 700 | -1 055 698 | -1 051 797 | -1 044 194 | -1 029 377 |
| 13 | | | | | | | | | | | | | | -1 059 735 | -1 059 663 | -1 059 525 | -1 059 254 | -1 058 727 | -1 057 700 | -1 055 698 | -1 051 797 |
| 14 | | | | | | | | | | | | | | | -1 059 771 | -1 059 735 | -1 059 663 | -1 059 525 | -1 059 254 | -1 058 727 | -1 057 700 |
| 15 | | | | | | | | | | | | | | | | -1 059 790 | -1 059 771 | -1 059 735 | -1 059 663 | -1 059 525 | -1 059 254 |
| | | | | | | | | | | | | | | | | | -1 059 800 | -1 059 790 | -1 059 771 | -1 059 735 | -1 059 663 |
| | | | | | | | | | | | | | | | | | | -1 059 805 | -1 059 800 | -1 059 790 | -1 059 771 |
| | | | | | | | | | | | | | | | | | | | -1 059 807 | -1 059 805 | -1 059 800 |
| | | | | | | | | | | | | | | | | | | | | -1 059 808 | -1 059 807 |
| | | | | | | | | | | | | | | | | | | | | | -1 059 809 |

# 8.10 Investment cost – 45 %, same price tree as base case (CF, OV, PV).

| *Cash flow* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 0 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 |
| 1 | | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 |
| 2 | | | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 |
| 3 | | | | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 |
| 4 | | | | | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 |
| 5 | | | | | | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 |
| 6 | | | | | | | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 |
| 7 | | | | | | | | 234 500 | 238 401 | 246 004 | 260 821 |
| 8 | | | | | | | | | 232 498 | 234 500 | 238 401 |
| 9 | | | | | | | | | | 231 471 | 232 498 |
| 10 | | | | | | | | | | | 230 944 |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | |
| 16 | | | | | | | | | | | |
| 17 | | | | | | | | | | | |
| 18 | | | | | | | | | | | |
| 19 | | | | | | | | | | | |
| 20 | | | | | | | | | | | |

| *Cash flow* | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 | 37 015 118 848 | 72 134 261 908 | 140 573 894 657 | 273 947 972 799 |
| 1 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 | 37 015 118 848 | 72 134 261 908 |
| 2 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 | 9 746 735 716 | 18 994 066 430 |
| 3 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 | 2 566 612 999 | 5 001 556 392 |
| 4 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 | 675 992 570 | 1 317 145 083 |
| 5 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 | 178 167 429 | 346 991 290 |
| 6 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 | 47 083 543 | 91 537 079 |
| 7 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 | 12 567 438 | 24 272 637 |
| 8 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 | 3 478 895 | 6 561 027 |
| 9 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 | 1 085 763 | 1 897 329 |
| 10 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 | 455 620 | 669 315 |
| 11 | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 | 289 695 | 345 964 |
| 12 | | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 | 246 004 | 260 821 |
| 13 | | | 230 463 | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 | 234 500 | 238 401 |
| 14 | | | | 230 427 | 230 463 | 230 535 | 230 673 | 230 944 | 231 471 | 232 498 |
| 15 | | | | | 230 408 | 230 427 | 230 463 | 230 535 | 230 673 | 230 944 |
| 16 | | | | | | 230 398 | 230 408 | 230 427 | 230 463 | 230 535 |
| 17 | | | | | | | 230 393 | 230 398 | 230 408 | 230 427 |
| 18 | | | | | | | | 230 391 | 230 393 | 230 398 |
| 19 | | | | | | | | | 230 390 | 230 391 |
| 20 | | | | | | | | | | 230 389 |

| *Option value* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 0 | 391 990 | 788 150 | 1 575 278 | 3 131 463 | 6 195 052 | 12 205 275 | 23 964 561 | 46 927 268 | 91 708 751 | 178 972 129 | 348 946 907 |
| 1 | | 186 553 | 380 556 | 770 530 | 1 549 105 | 3 094 013 | 6 143 282 | 12 135 408 | 23 870 398 | 46 795 708 | 91 510 280 |
| 2 | | | 85 606 | 177 992 | 366 792 | 749 254 | 1 517 610 | 3 049 485 | 6 083 116 | 12 057 023 | 23 769 402 |
| 3 | | | | 37 330 | 79 527 | 167 722 | 350 110 | 723 341 | 1 479 353 | 2 996 103 | 6 012 913 |
| 4 | | | | | 15 168 | 33 302 | 72 335 | 155 348 | 329 732 | 691 455 | 1 432 370 |
| 5 | | | | | | 5 588 | 12 725 | 28 666 | 63 830 | 140 370 | 304 602 |
| 6 | | | | | | | 1 794 | 4 266 | 10 043 | 23 386 | 53 805 |
| 7 | | | | | | | | 472 | 1 179 | 2 924 | 7 187 |
| 8 | | | | | | | | | 90 | 239 | 631 |
| 9 | | | | | | | | | | 9 | 27 |
| 10 | | | | | | | | | | | 0 |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | |
| 16 | | | | | | | | | | | |
| 17 | | | | | | | | | | | |
| 18 | | | | | | | | | | | |
| 19 | | | | | | | | | | | |
| 20 | | | | | | | | | | | |

| *Option value* | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 679 967 991 | 1 324 577 996 | 2 579 825 229 | 5 024 146 481 | 9 783 912 180 | 19 052 465 400 | 37 100 828 955 | 72 245 821 141 | 140 682 500 961 | 273 946 959 072 |
| 1 | 178 642 957 | 348 357 086 | 678 863 270 | 1 322 467 554 | 2 575 758 012 | 5 016 270 596 | 9 768 621 568 | 19 022 738 175 | 37 042 991 707 | 72 133 248 181 |
| 2 | 46 660 641 | 91 311 766 | 178 315 068 | 347 766 971 | 677 756 534 | 1 320 356 515 | 2 571 693 089 | 5 008 402 775 | 9 753 350 401 | 18 993 052 703 |
| 3 | 11 969 441 | 23 662 666 | 46 524 758 | 91 115 531 | 177 987 866 | 347 173 891 | 676 647 483 | 1 318 244 563 | 2 567 630 129 | 5 000 542 665 |
| 4 | 2 931 560 | 5 930 924 | 11 872 892 | 23 553 262 | 46 392 224 | 90 922 150 | 177 657 134 | 346 577 534 | 675 535 789 | 1 316 131 356 |
| 5 | 651 705 | 1 373 885 | 2 852 846 | 5 835 739 | 11 770 011 | 23 447 707 | 46 266 434 | 90 724 869 | 177 322 548 | 345 977 563 |
| 6 | 122 147 | 273 228 | 601 277 | 1 299 764 | 2 756 114 | 5 727 905 | 11 669 541 | 23 355 509 | 46 136 471 | 90 523 352 |
| 7 | 17 490 | 42 072 | 99 862 | 233 378 | 535 608 | 1 203 366 | 2 637 181 | 5 616 273 | 11 593 457 | 23 258 910 |
| 8 | 1 654 | 4 310 | 11 149 | 28 584 | 72 497 | 181 415 | 446 209 | 1 072 669 | 2 497 829 | 5 547 300 |
| 9 | 76 | 215 | 608 | 1 722 | 4 872 | 13 784 | 39 004 | 110 363 | 312 276 | 883 602 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | | | | | | 0 | 0 | 0 | 0 | 0 |
| 17 | | | | | | | 0 | 0 | 0 | 0 |
| 18 | | | | | | | | 0 | 0 | 0 |
| 19 | | | | | | | | | 0 | 0 |
| 20 | | | | | | | | | | 0 |

| *Project value* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 0 | -344 412 | 72 036 | 883 602 | 2 465 168 | 5 547 300 | 11 553 711 | 23 258 910 | 46 069 816 | 90 523 352 | 177 153 702 | 345 977 563 |
| 1 | | -558 107 | -344 412 | 72 036 | 883 602 | 2 465 168 | 5 547 300 | 11 553 711 | 23 258 910 | 46 069 816 | 90 523 352 |
| 2 | | | -667 763 | -558 107 | -344 412 | 72 036 | 883 602 | 2 465 168 | 5 547 300 | 11 553 711 | 23 258 910 |
| 3 | | | | -724 032 | -667 763 | -558 107 | -344 412 | 72 036 | 883 602 | 2 465 168 | 5 547 300 |
| 4 | | | | | -752 906 | -724 032 | -667 763 | -558 107 | -344 412 | 72 036 | 883 602 |
| 5 | | | | | | -767 723 | -752 906 | -724 032 | -667 763 | -558 107 | -344 412 |
| 6 | | | | | | | -775 326 | -767 723 | -752 906 | -724 032 | -667 763 |
| 7 | | | | | | | | -779 227 | -775 326 | -767 723 | -752 906 |
| 8 | | | | | | | | | -781 229 | -779 227 | -775 326 |
| 9 | | | | | | | | | | -782 256 | -781 229 |
| 10 | | | | | | | | | | | -782 783 |
| 11 | | | | | | | | | | | |
| 12 | | | | | | | | | | | |
| 13 | | | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | | | | | | | | | | | |

| *Project value* | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|
| | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 674 978 843 | 1 316 131 356 | 2 565 599 272 | 5 000 542 665 | 9 745 721 989 | 18 993 052 703 | 37 014 105 121 | 72 133 248 181 | 140 572 880 930 | 273 946 959 072 |
| 1 | 177 153 702 | 345 977 563 | 674 978 843 | 1 316 131 356 | 2 565 599 272 | 5 000 542 665 | 9 745 721 989 | 18 993 052 703 | 37 014 105 121 | 72 133 248 181 |
| 2 | 46 069 816 | 90 523 352 | 177 153 702 | 345 977 563 | 674 978 843 | 1 316 131 356 | 2 565 599 272 | 5 000 542 665 | 9 745 721 989 | 18 993 052 703 |
| 3 | 11 553 711 | 23 258 910 | 46 069 816 | 90 523 352 | 177 153 702 | 345 977 563 | 674 978 843 | 1 316 131 356 | 2 565 599 272 | 5 000 542 665 |
| 4 | 2 465 168 | 5 547 300 | 11 553 711 | 23 258 910 | 46 069 816 | 90 523 352 | 177 153 702 | 345 977 563 | 674 978 843 | 1 316 131 356 |
| 5 | 72 036 | 883 602 | 2 465 168 | 5 547 300 | 11 553 711 | 23 258 910 | 46 069 816 | 90 523 352 | 177 153 702 | 345 977 563 |
| 6 | -558 107 | -344 412 | 72 036 | 883 602 | 2 465 168 | 5 547 300 | 11 553 711 | 23 258 910 | 46 069 816 | 90 523 352 |
| 7 | -724 032 | -667 763 | -558 107 | -344 412 | 72 036 | 883 602 | 2 465 168 | 5 547 300 | 11 553 711 | 23 258 910 |
| 8 | -767 723 | -752 906 | -724 032 | -667 763 | -558 107 | -344 412 | 72 036 | 883 602 | 2 465 168 | 5 547 300 |
| 9 | -779 227 | -775 326 | -767 723 | -752 906 | -724 032 | -667 763 | -558 107 | -344 412 | 72 036 | 883 602 |
| 10 | -782 256 | -781 229 | -779 227 | -775 326 | -767 723 | -752 906 | -724 032 | -667 763 | -558 107 | -344 412 |
| 11 | -783 054 | -782 783 | -782 256 | -781 229 | -779 227 | -775 326 | -767 723 | -752 906 | -724 032 | -667 763 |
| 12 | | -783 192 | -783 054 | -782 783 | -782 256 | -781 229 | -779 227 | -775 326 | -767 723 | -752 906 |
| 13 | | | -783 264 | -783 192 | -783 054 | -782 783 | -782 256 | -781 229 | -779 227 | -775 326 |
| 14 | | | | -783 300 | -783 264 | -783 192 | -783 054 | -782 783 | -782 256 | -781 229 |
| 15 | | | | | -783 319 | -783 300 | -783 264 | -783 192 | -783 054 | -782 783 |
| | | | | | | -783 329 | -783 319 | -783 300 | -783 264 | -783 192 |
| | | | | | | | -783 334 | -783 329 | -783 319 | -783 300 |
| | | | | | | | | -783 336 | -783 334 | -783 329 |
| | | | | | | | | | -783 337 | -783 336 |
| | | | | | | | | | | -783 338 |

# 8.11 No subsidy, same price tree as base case (CF, OV, PV).

| Cash flow | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 438 927 | 855 374 | 1 666 940 | 3 248 507 | 6 330 639 | 12 337 050 | 24 042 249 | 46 853 155 | 91 306 691 | 177 937 041 | 346 760 901 | 675 762 182 | 1 316 914 695 | 2 566 382 611 | 5 001 326 003 | 9 746 505 327 | 18 993 836 041 | 37 014 888 460 | 72 134 031 520 | 140 573 664 268 | 273 947 742 411 |
| 1 | | 225 231 | 438 927 | 855 374 | 1 666 940 | 3 248 507 | 6 330 639 | 12 337 050 | 24 042 249 | 46 853 155 | 91 306 691 | 177 937 041 | 346 760 901 | 675 762 182 | 1 316 914 695 | 2 566 382 611 | 5 001 326 003 | 9 746 505 327 | 18 993 836 041 | 37 014 888 460 | 72 134 031 520 |
| 2 | | | 115 575 | 225 231 | 438 927 | 855 374 | 1 666 940 | 3 248 507 | 6 330 639 | 12 337 050 | 24 042 249 | 46 853 155 | 91 306 691 | 177 937 041 | 346 760 901 | 675 762 182 | 1 316 914 695 | 2 566 382 611 | 5 001 326 003 | 9 746 505 327 | 18 993 836 041 |
| 3 | | | | 59 306 | 115 575 | 225 231 | 438 927 | 855 374 | 1 666 940 | 3 248 507 | 6 330 639 | 12 337 050 | 24 042 249 | 46 853 155 | 91 306 691 | 177 937 041 | 346 760 901 | 675 762 182 | 1 316 914 695 | 2 566 382 611 | 5 001 326 003 |
| 4 | | | | | 30 432 | 59 306 | 115 575 | 225 231 | 438 927 | 855 374 | 1 666 940 | 3 248 507 | 6 330 639 | 12 337 050 | 24 042 249 | 46 853 155 | 91 306 691 | 177 937 041 | 346 760 901 | 675 762 182 | 1 316 914 695 |
| 5 | | | | | | 15 616 | 30 432 | 59 306 | 115 575 | 225 231 | 438 927 | 855 374 | 1 666 940 | 3 248 507 | 6 330 639 | 12 337 050 | 24 042 249 | 46 853 155 | 91 306 691 | 177 937 041 | 346 760 901 |
| 6 | | | | | | | 8 013 | 15 616 | 30 432 | 59 306 | 115 575 | 225 231 | 438 927 | 855 374 | 1 666 940 | 3 248 507 | 6 330 639 | 12 337 050 | 24 042 249 | 46 853 155 | 91 306 691 |
| 7 | | | | | | | | 4 112 | 8 013 | 15 616 | 30 432 | 59 306 | 115 575 | 225 231 | 438 927 | 855 374 | 1 666 940 | 3 248 507 | 6 330 639 | 12 337 050 | 24 042 249 |
| 8 | | | | | | | | | 2 110 | 4 112 | 8 013 | 15 616 | 30 432 | 59 306 | 115 575 | 225 231 | 438 927 | 855 374 | 1 666 940 | 3 248 507 | 6 330 639 |
| 9 | | | | | | | | | | 1 083 | 2 110 | 4 112 | 8 013 | 15 616 | 30 432 | 59 306 | 115 575 | 225 231 | 438 927 | 855 374 | 1 666 940 |
| 10 | | | | | | | | | | | 556 | 1 083 | 2 110 | 4 112 | 8 013 | 15 616 | 30 432 | 59 306 | 115 575 | 225 231 | 438 927 |
| 11 | | | | | | | | | | | | 285 | 556 | 1 083 | 2 110 | 4 112 | 8 013 | 15 616 | 30 432 | 59 306 | 115 575 |
| 12 | | | | | | | | | | | | | 146 | 285 | 556 | 1 083 | 2 110 | 4 112 | 8 013 | 15 616 | 30 432 |
| 13 | | | | | | | | | | | | | | 75 | 146 | 285 | 556 | 1 083 | 2 110 | 4 112 | 8 013 |
| 14 | | | | | | | | | | | | | | | 39 | 75 | 146 | 285 | 556 | 1 083 | 2 110 |
| 15 | | | | | | | | | | | | | | | | 20 | 39 | 75 | 146 | 285 | 556 |
| 16 | | | | | | | | | | | | | | | | | 10 | 20 | 39 | 75 | 146 |
| 17 | | | | | | | | | | | | | | | | | | 5 | 10 | 20 | 39 |
| 18 | | | | | | | | | | | | | | | | | | | 3 | 5 | 10 |
| 19 | | | | | | | | | | | | | | | | | | | | 1 | 3 |
| 20 | | | | | | | | | | | | | | | | | | | | | 1 |

| Option value | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 359 722 | 735 050 | 1 490 701 | 3 001 537 | 6 003 325 | 11 934 653 | 23 600 756 | 46 463 219 | 91 148 315 | 178 330 428 | 348 245 357 | 679 225 393 | 1 323 803 610 | 2 579 019 867 | 5 023 308 904 | 9 783 041 101 | 19 051 559 478 | 37 099 886 795 | 72 244 841 295 | 140 681 481 921 | 273 945 899 271 |
| 1 | | 164 351 | 342 392 | 706 957 | 1 446 878 | 2 936 011 | 5 909 697 | 11 806 851 | 23 433 015 | 46 247 054 | 90 862 774 | 177 920 893 | 347 585 995 | 678 057 908 | 1 321 629 978 | 2 574 886 933 | 5 015 364 673 | 9 767 679 409 | 19 021 758 330 | 37 041 972 668 | 72 132 188 380 |
| 2 | | | 71 277 | 152 179 | 321 663 | 672 975 | 1 393 539 | 2 856 320 | 5 797 023 | 11 656 643 | 23 243 496 | 46 015 513 | 90 572 525 | 177 515 125 | 346 929 395 | 676 885 455 | 1 319 450 593 | 2 570 750 930 | 5 007 422 930 | 9 752 331 361 | 18 991 992 901 |
| 3 | | | | 28 768 | 63 308 | 137 841 | 296 781 | 631 577 | 1 327 977 | 2 758 334 | 5 660 161 | 11 479 559 | 23 031 430 | 45 774 040 | 90 286 866 | 177 116 786 | 346 267 969 | 675 705 323 | 1 317 264 717 | 2 566 611 089 | 4 999 482 863 |
| 4 | | | | | 10 515 | 23 997 | 54 190 | 120 984 | 266 808 | 580 711 | 1 246 386 | 2 636 191 | 5 492 206 | 11 271 171 | 22 800 363 | 45 535 799 | 90 016 227 | 176 714 974 | 345 597 689 | 674 516 750 | 1 315 071 555 |
| 5 | | | | | | 3 345 | 7 968 | 18 801 | 43 889 | 101 257 | 230 581 | 517 528 | 1 143 141 | 2 481 110 | 5 283 819 | 11 029 658 | 22 565 883 | 45 324 275 | 89 745 023 | 176 303 509 | 344 917 761 |
| 6 | | | | | | | 869 | 2 177 | 5 409 | 13 325 | 32 505 | 78 404 | 186 683 | 437 878 | 1 009 232 | 2 278 795 | 5 022 944 | 10 767 008 | 22 375 663 | 45 117 431 | 89 463 551 |
| 7 | | | | | | | | 164 | 436 | 1 151 | 3 022 | 7 887 | 20 436 | 52 508 | 133 528 | 335 253 | 828 154 | 2 002 453 | 4 701 589 | 10 574 418 | 22 199 109 |
| 8 | | | | | | | | | 17 | 48 | 136 | 386 | 1 092 | 3 090 | 8 744 | 24 741 | 70 006 | 198 085 | 560 492 | 1 585 941 | 4 487 499 |
| 9 | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 17 | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 |
| 18 | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| 19 | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| 20 | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | | 2,19 | | | | | | | | | | | | | | | | | |

| Project value | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | -1 404 213 | -987 766 | -176 200 | 1 405 367 | 4 487 499 | 10 493 910 | 22 199 109 | 45 010 015 | 89 463 551 | 176 093 901 | 344 917 761 | 673 919 042 | 1 315 071 555 | 2 564 539 471 | 4 999 482 863 | 9 744 662 187 | 18 991 992 901 | 37 013 045 320 | 72 132 188 380 | 140 571 821 128 | 273 945 899 271 |
| 1 | | -1 617 909 | -1 404 213 | -987 766 | -176 200 | 1 405 367 | 4 487 499 | 10 493 910 | 22 199 109 | 45 010 015 | 89 463 551 | 176 093 901 | 344 917 761 | 673 919 042 | 1 315 071 555 | 2 564 539 471 | 4 999 482 863 | 9 744 662 187 | 18 991 992 901 | 37 013 045 320 | 72 132 188 380 |
| 2 | | | -1 727 565 | -1 617 909 | -1 404 213 | -987 766 | -176 200 | 1 405 367 | 4 487 499 | 10 493 910 | 22 199 109 | 45 010 015 | 89 463 551 | 176 093 901 | 344 917 761 | 673 919 042 | 1 315 071 555 | 2 564 539 471 | 4 999 482 863 | 9 744 662 187 | 18 991 992 901 |
| 3 | | | | -1 783 834 | -1 727 565 | -1 617 909 | -1 404 213 | -987 766 | -176 200 | 1 405 367 | 4 487 499 | 10 493 910 | 22 199 109 | 45 010 015 | 89 463 551 | 176 093 901 | 344 917 761 | 673 919 042 | 1 315 071 555 | 2 564 539 471 | 4 999 482 863 |
| 4 | | | | | -1 812 708 | -1 783 834 | -1 727 565 | -1 617 909 | -1 404 213 | -987 766 | -176 200 | 1 405 367 | 4 487 499 | 10 493 910 | 22 199 109 | 45 010 015 | 89 463 551 | 176 093 901 | 344 917 761 | 673 919 042 | 1 315 071 555 |
| 5 | | | | | | -1 827 524 | -1 812 708 | -1 783 834 | -1 727 565 | -1 617 909 | -1 404 213 | -987 766 | -176 200 | 1 405 367 | 4 487 499 | 10 493 910 | 22 199 109 | 45 010 015 | 89 463 551 | 176 093 901 | 344 917 761 |
| 6 | | | | | | | -1 835 127 | -1 827 524 | -1 812 708 | -1 783 834 | -1 727 565 | -1 617 909 | -1 404 213 | -987 766 | -176 200 | 1 405 367 | 4 487 499 | 10 493 910 | 22 199 109 | 45 010 015 | 89 463 551 |
| 7 | | | | | | | | -1 839 028 | -1 835 127 | -1 827 524 | -1 812 708 | -1 783 834 | -1 727 565 | -1 617 909 | -1 404 213 | -987 766 | -176 200 | 1 405 367 | 4 487 499 | 10 493 910 | 22 199 109 |
| 8 | | | | | | | | | -1 841 030 | -1 839 028 | -1 835 127 | -1 827 524 | -1 812 708 | -1 783 834 | -1 727 565 | -1 617 909 | -1 404 213 | -987 766 | -176 200 | 1 405 367 | 4 487 499 |
| 9 | | | | | | | | | | -1 842 057 | -1 841 030 | -1 839 028 | -1 835 127 | -1 827 524 | -1 812 708 | -1 783 834 | -1 727 565 | -1 617 909 | -1 404 213 | -987 766 | -176 200 |
| 10 | | | | | | | | | | | -1 842 584 | -1 842 057 | -1 841 030 | -1 839 028 | -1 835 127 | -1 827 524 | -1 812 708 | -1 783 834 | -1 727 565 | -1 617 909 | -1 404 213 |
| 11 | | | | | | | | | | | | -1 842 855 | -1 842 584 | -1 842 057 | -1 841 030 | -1 839 028 | -1 835 127 | -1 827 524 | -1 812 708 | -1 783 834 | -1 727 565 |
| 12 | | | | | | | | | | | | | -1 842 994 | -1 842 855 | -1 842 584 | -1 842 057 | -1 841 030 | -1 839 028 | -1 835 127 | -1 827 524 | -1 812 708 |
| 13 | | | | | | | | | | | | | | -1 843 065 | -1 842 994 | -1 842 855 | -1 842 584 | -1 842 057 | -1 841 030 | -1 839 028 | -1 835 127 |
| 14 | | | | | | | | | | | | | | | -1 843 101 | -1 843 065 | -1 842 994 | -1 842 855 | -1 842 584 | -1 842 057 | -1 841 030 |
| 15 | | | | | | | | | | | | | | | | -1 843 120 | -1 843 101 | -1 843 065 | -1 842 994 | -1 842 855 | -1 842 584 |
| | | | | | | | | | | | | | | | | | -1 843 130 | -1 843 120 | -1 843 101 | -1 843 065 | -1 842 994 |
| | | | | | | | | | | | | | | | | | | -1 843 135 | -1 843 130 | -1 843 120 | -1 843 101 |
| | | | | | | | | | | | | | | | | | | | -1 843 137 | -1 843 135 | -1 843 130 |
| | | | | | | | | | | | | | | | | | | | | -1 843 139 | -1 843 137 |
| | | | | | | | | | | | | | | | | | | | | | -1 843 139 |

## 8.12 Double subsidy, same price tree as base case (CF, OV, PV).

| *Cash flow* | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| | 0 | 899 704 | 1 316 151 | 2 127 717 | 3 709 283 | 6 791 416 | 12 797 826 | 24 503 025 | 47 313 932 | 91 767 467 | 178 397 817 | 347 221 678 | 676 222 958 | 1 317 375 471 | 2 566 843 388 | 5 001 786 780 | 9 746 966 104 | 18 994 296 818 | 37 015 349 236 | 72 134 492 296 | 140 574 125 045 | 273 948 203 187 |
| | 1 | | 686 008 | 899 704 | 1 316 151 | 2 127 717 | 3 709 283 | 6 791 416 | 12 797 826 | 24 503 025 | 47 313 932 | 91 767 467 | 178 397 817 | 347 221 678 | 676 222 958 | 1 317 375 471 | 2 566 843 388 | 5 001 786 780 | 9 746 966 104 | 18 994 296 818 | 37 015 349 236 | 72 134 492 296 |
| | 2 | | | 576 352 | 686 008 | 899 704 | 1 316 151 | 2 127 717 | 3 709 283 | 6 791 416 | 12 797 826 | 24 503 025 | 47 313 932 | 91 767 467 | 178 397 817 | 347 221 678 | 676 222 958 | 1 317 375 471 | 2 566 843 388 | 5 001 786 780 | 9 746 966 104 | 18 994 296 818 |
| | 3 | | | | 520 083 | 576 352 | 686 008 | 899 704 | 1 316 151 | 2 127 717 | 3 709 283 | 6 791 416 | 12 797 826 | 24 503 025 | 47 313 932 | 91 767 467 | 178 397 817 | 347 221 678 | 676 222 958 | 1 317 375 471 | 2 566 843 388 | 5 001 786 780 |
| | 4 | | | | | 491 209 | 520 083 | 576 352 | 686 008 | 899 704 | 1 316 151 | 2 127 717 | 3 709 283 | 6 791 416 | 12 797 826 | 24 503 025 | 47 313 932 | 91 767 467 | 178 397 817 | 347 221 678 | 676 222 958 | 1 317 375 471 |
| | 5 | | | | | | 476 393 | 491 209 | 520 083 | 576 352 | 686 008 | 899 704 | 1 316 151 | 2 127 717 | 3 709 283 | 6 791 416 | 12 797 826 | 24 503 025 | 47 313 932 | 91 767 467 | 178 397 817 | 347 221 678 |
| | 6 | | | | | | | 468 790 | 476 393 | 491 209 | 520 083 | 576 352 | 686 008 | 899 704 | 1 316 151 | 2 127 717 | 3 709 283 | 6 791 416 | 12 797 826 | 24 503 025 | 47 313 932 | 91 767 467 |
| | 7 | | | | | | | | 464 888 | 468 790 | 476 393 | 491 209 | 520 083 | 576 352 | 686 008 | 899 704 | 1 316 151 | 2 127 717 | 3 709 283 | 6 791 416 | 12 797 826 | 24 503 025 |
| | 8 | | | | | | | | | 462 886 | 464 888 | 468 790 | 476 393 | 491 209 | 520 083 | 576 352 | 686 008 | 899 704 | 1 316 151 | 2 127 717 | 3 709 283 | 6 791 416 |
| | 9 | | | | | | | | | | 461 859 | 462 886 | 464 888 | 468 790 | 476 393 | 491 209 | 520 083 | 576 352 | 686 008 | 899 704 | 1 316 151 | 2 127 717 |
| | 10 | | | | | | | | | | | 461 332 | 461 859 | 462 886 | 464 888 | 468 790 | 476 393 | 491 209 | 520 083 | 576 352 | 686 008 | 899 704 |
| | 11 | | | | | | | | | | | | 461 062 | 461 332 | 461 859 | 462 886 | 464 888 | 468 790 | 476 393 | 491 209 | 520 083 | 576 352 |
| | 12 | | | | | | | | | | | | | 460 923 | 461 062 | 461 332 | 461 859 | 462 886 | 464 888 | 468 790 | 476 393 | 491 209 |
| | 13 | | | | | | | | | | | | | | 460 852 | 460 923 | 461 062 | 461 332 | 461 859 | 462 886 | 464 888 | 468 790 |
| | 14 | | | | | | | | | | | | | | | 460 815 | 460 852 | 460 923 | 461 062 | 461 332 | 461 859 | 462 886 |
| | 15 | | | | | | | | | | | | | | | | 460 796 | 460 815 | 460 852 | 460 923 | 461 062 | 461 332 |
| | 16 | | | | | | | | | | | | | | | | | 460 787 | 460 796 | 460 815 | 460 852 | 460 923 |
| | 17 | | | | | | | | | | | | | | | | | | 460 782 | 460 787 | 460 796 | 460 815 |
| | 18 | | | | | | | | | | | | | | | | | | | 460 779 | 460 782 | 460 787 |
| | 19 | | | | | | | | | | | | | | | | | | | | 460 778 | 460 779 |
| | 20 | | | | | | | | | | | | | | | | | | | | | 460 777 |

| *Option value* | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| | 0 | 371 708 | 754 956 | 1 522 736 | 3 051 323 | 6 077 759 | 12 041 265 | 23 746 426 | 46 652 341 | 91 380 979 | 178 601 642 | 348 546 371 | 679 547 124 | 1 324 140 295 | 2 579 370 020 | 5 023 673 063 | 9 783 419 825 | 19 051 953 351 | 37 100 296 424 | 72 245 267 309 | 140 681 924 976 | 273 946 360 047 |
| | 1 | | 172 491 | 356 507 | 730 702 | 1 485 489 | 2 996 452 | 6 000 354 | 11 936 482 | 23 608 794 | 46 472 028 | 91 133 824 | 178 228 904 | 347 919 384 | 678 408 060 | 1 321 994 136 | 2 575 265 657 | 5 015 758 547 | 9 768 089 038 | 19 022 184 343 | 37 042 415 722 | 72 132 649 156 |
| | 2 | | | 76 459 | 161 591 | 338 270 | 701 342 | 1 440 243 | 2 930 062 | 5 908 034 | 11 814 949 | 23 455 922 | 46 282 226 | 90 885 269 | 177 859 858 | 347 293 553 | 677 264 179 | 1 319 844 466 | 2 571 160 559 | 5 007 848 943 | 9 752 774 415 | 18 992 453 678 |
| | 3 | | | | 31 821 | 69 134 | 148 664 | 316 286 | 665 522 | 1 384 723 | 2 848 880 | 5 797 027 | 11 673 871 | 23 288 260 | 46 087 973 | 90 642 113 | 177 495 511 | 346 661 843 | 676 114 952 | 1 317 690 731 | 2 567 054 143 | 4 999 943 640 |
| | 4 | | | | | 12 149 | 27 287 | 60 653 | 133 330 | 289 648 | 621 403 | 1 315 740 | 2 748 329 | 5 662 475 | 11 511 059 | 23 110 141 | 45 899 869 | 90 410 101 | 177 124 603 | 346 023 702 | 674 959 804 | 1 315 532 331 |
| | 5 | | | | | | 4 121 | 9 622 | 22 252 | 50 918 | 115 168 | 257 190 | 566 403 | 1 228 589 | 2 621 689 | 5 498 262 | 11 327 478 | 22 935 659 | 45 733 903 | 90 171 037 | 176 746 563 | 345 378 538 |
| | 6 | | | | | | | 1 184 | 2 891 | 7 000 | 16 800 | 39 915 | 93 757 | 217 395 | 496 690 | 1 115 775 | 2 458 347 | 5 297 782 | 11 137 010 | 22 801 677 | 45 560 486 | 89 924 327 |
| | 7 | | | | | | | | 267 | 685 | 1 747 | 4 429 | 11 149 | 27 834 | 68 832 | 168 322 | 406 105 | 963 686 | 2 239 368 | 5 062 441 | 11 017 472 | 22 659 885 |
| | 8 | | | | | | | | | 41 | 111 | 299 | 805 | 2 158 | 5 768 | 15 366 | 40 780 | 107 750 | 283 270 | 740 366 | 1 921 844 | 4 948 276 |
| | 9 | | | | | | | | | | 3 | 9 | 24 | 69 | 196 | 554 | 1 569 | 4 439 | 12 562 | 35 544 | 100 573 | 284 577 |
| | 10 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 11 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 12 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 13 | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 14 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 15 | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| | 16 | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 |
| | 17 | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 |
| | 18 | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| | 19 | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| | 20 | | | | | | | | | | | | | | | | | | | | | 0 |

| | | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Project value* | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| | 0 | -943 436 | -526 989 | 284 577 | 1 866 143 | 4 948 276 | 10 954 686 | 22 659 885 | 45 470 792 | 89 924 327 | 176 554 677 | 345 378 538 | 674 379 818 | 1 315 532 331 | 2 565 000 248 | 4 999 943 640 | 9 745 122 964 | 18 992 453 678 | 37 013 506 096 | 72 132 649 156 | 140 572 281 905 | 273 946 360 047 |
| | 1 | | -1 157 132 | -943 436 | -526 989 | 284 577 | 1 866 143 | 4 948 276 | 10 954 686 | 22 659 885 | 45 470 792 | 89 924 327 | 176 554 677 | 345 378 538 | 674 379 818 | 1 315 532 331 | 2 565 000 248 | 4 999 943 640 | 9 745 122 964 | 18 992 453 678 | 37 013 506 096 | 72 132 649 156 |
| | 2 | | | -1 266 788 | -1 157 132 | -943 436 | -526 989 | 284 577 | 1 866 143 | 4 948 276 | 10 954 686 | 22 659 885 | 45 470 792 | 89 924 327 | 176 554 677 | 345 378 538 | 674 379 818 | 1 315 532 331 | 2 565 000 248 | 4 999 943 640 | 9 745 122 964 | 18 992 453 678 |
| | 3 | | | | -1 323 057 | -1 266 788 | -1 157 132 | -943 436 | -526 989 | 284 577 | 1 866 143 | 4 948 276 | 10 954 686 | 22 659 885 | 45 470 792 | 89 924 327 | 176 554 677 | 345 378 538 | 674 379 818 | 1 315 532 331 | 2 565 000 248 | 4 999 943 640 |
| | 4 | | | | | -1 351 931 | -1 323 057 | -1 266 788 | -1 157 132 | -943 436 | -526 989 | 284 577 | 1 866 143 | 4 948 276 | 10 954 686 | 22 659 885 | 45 470 792 | 89 924 327 | 176 554 677 | 345 378 538 | 674 379 818 | 1 315 532 331 |
| | 5 | | | | | | -1 366 747 | -1 351 931 | -1 323 057 | -1 266 788 | -1 157 132 | -943 436 | -526 989 | 284 577 | 1 866 143 | 4 948 276 | 10 954 686 | 22 659 885 | 45 470 792 | 89 924 327 | 176 554 677 | 345 378 538 |
| | 6 | | | | | | | -1 374 350 | -1 366 747 | -1 351 931 | -1 323 057 | -1 266 788 | -1 157 132 | -943 436 | -526 989 | 284 577 | 1 866 143 | 4 948 276 | 10 954 686 | 22 659 885 | 45 470 792 | 89 924 327 |
| | 7 | | | | | | | | -1 378 252 | -1 374 350 | -1 366 747 | -1 351 931 | -1 323 057 | -1 266 788 | -1 157 132 | -943 436 | -526 989 | 284 577 | 1 866 143 | 4 948 276 | 10 954 686 | 22 659 885 |
| | 8 | | | | | | | | | -1 380 254 | -1 378 252 | -1 374 350 | -1 366 747 | -1 351 931 | -1 323 057 | -1 266 788 | -1 157 132 | -943 436 | -526 989 | 284 577 | 1 866 143 | 4 948 276 |
| | 9 | | | | | | | | | | -1 381 281 | -1 380 254 | -1 378 252 | -1 374 350 | -1 366 747 | -1 351 931 | -1 323 057 | -1 266 788 | -1 157 132 | -943 436 | -526 989 | 284 577 |
| | 10 | | | | | | | | | | | -1 381 808 | -1 381 281 | -1 380 254 | -1 378 252 | -1 374 350 | -1 366 747 | -1 351 931 | -1 323 057 | -1 266 788 | -1 157 132 | -943 436 |
| | 11 | | | | | | | | | | | | -1 382 078 | -1 381 808 | -1 381 281 | -1 380 254 | -1 378 252 | -1 374 350 | -1 366 747 | -1 351 931 | -1 323 057 | -1 266 788 |
| | 12 | | | | | | | | | | | | | -1 382 217 | -1 382 078 | -1 381 808 | -1 381 281 | -1 380 254 | -1 378 252 | -1 374 350 | -1 366 747 | -1 351 931 |
| | 13 | | | | | | | | | | | | | | -1 382 288 | -1 382 217 | -1 382 078 | -1 381 808 | -1 381 281 | -1 380 254 | -1 378 252 | -1 374 350 |
| | 14 | | | | | | | | | | | | | | | -1 382 325 | -1 382 288 | -1 382 217 | -1 382 078 | -1 381 808 | -1 381 281 | -1 380 254 |
| | 15 | | | | | | | | | | | | | | | | -1 382 344 | -1 382 325 | -1 382 288 | -1 382 217 | -1 382 078 | -1 381 808 |
| | | | | | | | | | | | | | | | | | | -1 382 353 | -1 382 344 | -1 382 325 | -1 382 288 | -1 382 217 |
| | | | | | | | | | | | | | | | | | | | -1 382 358 | -1 382 353 | -1 382 344 | -1 382 325 |
| | | | | | | | | | | | | | | | | | | | | -1 382 361 | -1 382 358 | -1 382 353 |
| | | | | | | | | | | | | | | | | | | | | | -1 382 362 | -1 382 361 |
| | | | | | | | | | | | | | | | | | | | | | | -1 382 363 |

## 8.13 Subsidy 3.5 times base case subsidy, same price tree as base case (CF, OV, PV).

| *Cash flow* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 1 245 286 | 1 661 733 | 2 473 299 | 4 054 866 | 7 136 998 | 13 143 409 | 24 848 607 | 47 659 514 | 92 113 049 | 178 743 399 | 347 567 260 | 676 568 541 | 1 317 721 054 | 2 567 188 970 | 5 002 132 362 | 9 747 311 686 | 18 994 642 400 | 37 015 694 819 | 72 134 837 879 | 140 574 470 627 | 273 948 548 770 |
| 1 | | 1 031 590 | 1 245 286 | 1 661 733 | 2 473 299 | 4 054 866 | 7 136 998 | 13 143 409 | 24 848 607 | 47 659 514 | 92 113 049 | 178 743 399 | 347 567 260 | 676 568 541 | 1 317 721 054 | 2 567 188 970 | 5 002 132 362 | 9 747 311 686 | 18 994 642 400 | 37 015 694 819 | 72 134 837 879 |
| 2 | | | 921 934 | 1 031 590 | 1 245 286 | 1 661 733 | 2 473 299 | 4 054 866 | 7 136 998 | 13 143 409 | 24 848 607 | 47 659 514 | 92 113 049 | 178 743 399 | 347 567 260 | 676 568 541 | 1 317 721 054 | 2 567 188 970 | 5 002 132 362 | 9 747 311 686 | 18 994 642 400 |
| 3 | | | | 865 665 | 921 934 | 1 031 590 | 1 245 286 | 1 661 733 | 2 473 299 | 4 054 866 | 7 136 998 | 13 143 409 | 24 848 607 | 47 659 514 | 92 113 049 | 178 743 399 | 347 567 260 | 676 568 541 | 1 317 721 054 | 2 567 188 970 | 5 002 132 362 |
| 4 | | | | | 836 791 | 865 665 | 921 934 | 1 031 590 | 1 245 286 | 1 661 733 | 2 473 299 | 4 054 866 | 7 136 998 | 13 143 409 | 24 848 607 | 47 659 514 | 92 113 049 | 178 743 399 | 347 567 260 | 676 568 541 | 1 317 721 054 |
| 5 | | | | | | 821 975 | 836 791 | 865 665 | 921 934 | 1 031 590 | 1 245 286 | 1 661 733 | 2 473 299 | 4 054 866 | 7 136 998 | 13 143 409 | 24 848 607 | 47 659 514 | 92 113 049 | 178 743 399 | 347 567 260 |
| 6 | | | | | | | 814 372 | 821 975 | 836 791 | 865 665 | 921 934 | 1 031 590 | 1 245 286 | 1 661 733 | 2 473 299 | 4 054 866 | 7 136 998 | 13 143 409 | 24 848 607 | 47 659 514 | 92 113 049 |
| 7 | | | | | | | | 810 471 | 814 372 | 821 975 | 836 791 | 865 665 | 921 934 | 1 031 590 | 1 245 286 | 1 661 733 | 2 473 299 | 4 054 866 | 7 136 998 | 13 143 409 | 24 848 607 |
| 8 | | | | | | | | | 808 469 | 810 471 | 814 372 | 821 975 | 836 791 | 865 665 | 921 934 | 1 031 590 | 1 245 286 | 1 661 733 | 2 473 299 | 4 054 866 | 7 136 998 |
| 9 | | | | | | | | | | 807 441 | 808 469 | 810 471 | 814 372 | 821 975 | 836 791 | 865 665 | 921 934 | 1 031 590 | 1 245 286 | 1 661 733 | 2 473 299 |
| 10 | | | | | | | | | | | 806 914 | 807 441 | 808 469 | 810 471 | 814 372 | 821 975 | 836 791 | 865 665 | 921 934 | 1 031 590 | 1 245 286 |
| 11 | | | | | | | | | | | | 806 644 | 806 914 | 807 441 | 808 469 | 810 471 | 814 372 | 821 975 | 836 791 | 865 665 | 921 934 |
| 12 | | | | | | | | | | | | | 806 505 | 806 644 | 806 914 | 807 441 | 808 469 | 810 471 | 814 372 | 821 975 | 836 791 |
| 13 | | | | | | | | | | | | | | 806 434 | 806 505 | 806 644 | 806 914 | 807 441 | 808 469 | 810 471 | 814 372 |
| 14 | | | | | | | | | | | | | | | 806 397 | 806 434 | 806 505 | 806 644 | 806 914 | 807 441 | 808 469 |
| 15 | | | | | | | | | | | | | | | | 806 379 | 806 397 | 806 434 | 806 505 | 806 644 | 806 914 |
| 16 | | | | | | | | | | | | | | | | | 806 369 | 806 379 | 806 397 | 806 434 | 806 505 |
| 17 | | | | | | | | | | | | | | | | | | 806 364 | 806 369 | 806 379 | 806 397 |
| 18 | | | | | | | | | | | | | | | | | | | 806 361 | 806 364 | 806 369 |
| 19 | | | | | | | | | | | | | | | | | | | | 806 360 | 806 361 |
| 20 | | | | | | | | | | | | | | | | | | | | | 806 359 |

| *Option value* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | 383 409 | 774 106 | 1 553 048 | 3 097 556 | 6 145 426 | 12 135 884 | 23 872 270 | 46 810 949 | 91 570 073 | 178 815 379 | 348 777 443 | 679 789 926 | 1 324 392 808 | 2 579 632 634 | 5 023 946 181 | 9 783 703 869 | 19 052 248 757 | 37 100 603 645 | 72 245 586 819 | 140 682 257 266 | 273 946 705 630 |
| 1 | | 180 603 | 370 381 | 753 679 | 1 522 190 | 3 052 736 | 6 082 810 | 12 051 244 | 23 759 715 | 46 658 762 | 91 351 005 | 178 467 775 | 348 171 898 | 678 670 674 | 1 322 267 255 | 2 575 549 701 | 5 016 053 952 | 9 768 396 259 | 19 022 503 854 | 37 042 748 013 | 72 132 994 739 |
| 2 | | | 81 736 | 171 053 | 354 724 | 728 983 | 1 484 877 | 2 998 958 | 6 009 040 | 11 954 604 | 23 636 771 | 46 500 537 | 91 131 318 | 178 122 472 | 347 566 672 | 677 548 223 | 1 320 139 872 | 2 571 467 780 | 5 008 168 454 | 9 753 106 706 | 18 992 799 260 |
| 3 | | | | 34 999 | 75 130 | 159 659 | 335 799 | 698 878 | 1 439 316 | 2 933 814 | 5 921 574 | 11 844 388 | 23 504 258 | 46 339 958 | 90 915 232 | 177 779 554 | 346 957 248 | 676 422 173 | 1 318 010 241 | 2 567 386 434 | 5 000 289 222 |
| 4 | | | | | 13 891 | 30 757 | 67 392 | 146 033 | 312 773 | 661 817 | 1 383 025 | 2 854 037 | 5 817 345 | 11 719 804 | 23 365 781 | 46 183 913 | 90 705 506 | 177 431 824 | 346 343 213 | 675 292 095 | 1 315 877 914 |
| 5 | | | | | | 4 967 | 11 412 | 25 952 | 58 367 | 129 707 | 284 543 | 615 615 | 1 312 411 | 2 755 045 | 5 692 955 | 11 582 779 | 23 231 064 | 46 041 125 | 90 490 547 | 177 078 854 | 345 724 120 |
| 6 | | | | | | | 1 536 | 3 684 | 8 755 | 20 600 | 47 928 | 110 136 | 249 605 | 557 027 | 1 221 920 | 2 630 131 | 5 545 924 | 11 444 231 | 23 121 187 | 45 892 776 | 90 269 909 |
| 7 | | | | | | | | 385 | 970 | 2 426 | 6 020 | 14 807 | 36 048 | 86 733 | 205 854 | 480 817 | 1 101 959 | 2 468 870 | 5 381 951 | 11 349 763 | 23 005 467 |
| 8 | | | | | | | | | 69 | 185 | 491 | 1 295 | 3 399 | 8 872 | 22 992 | 59 078 | 150 248 | 377 271 | 932 074 | 2 254 134 | 5 293 858 |
| 9 | | | | | | | | | | 7 | 19 | 54 | 153 | 434 | 1 228 | 3 474 | 9 831 | 27 816 | 78 707 | 222 706 | 630 159 |
| 10 | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 | 0 |
| 16 | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 | 0 |
| 17 | | | | | | | | | | | | | | | | | | 0 | 0 | 0 | 0 |
| 18 | | | | | | | | | | | | | | | | | | | 0 | 0 | 0 |
| 19 | | | | | | | | | | | | | | | | | | | | 0 | 0 |
| 20 | | | | | | | | | | | | | | | | | | | | | 0 |
| | | | | 2,19 | | | | | | | | | | | | | | | | | |

| *Project value* | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 0 | -597 854 | -181 407 | 630 159 | 2 211 726 | 5 293 858 | 11 300 269 | 23 005 467 | 45 816 374 | 90 269 909 | 176 900 259 | 345 724 120 | 674 725 401 | 1 315 877 914 | 2 565 345 830 | 5 000 289 222 | 9 745 468 546 | 18 992 799 260 | 37 013 851 679 | 72 132 994 739 | 140 572 627 487 | 273 946 705 630 |
| 1 | | -811 550 | -597 854 | -181 407 | 630 159 | 2 211 726 | 5 293 858 | 11 300 269 | 23 005 467 | 45 816 374 | 90 269 909 | 176 900 259 | 345 724 120 | 674 725 401 | 1 315 877 914 | 2 565 345 830 | 5 000 289 222 | 9 745 468 546 | 18 992 799 260 | 37 013 851 679 | 72 132 994 739 |
| 2 | | | -921 206 | -811 550 | -597 854 | -181 407 | 630 159 | 2 211 726 | 5 293 858 | 11 300 269 | 23 005 467 | 45 816 374 | 90 269 909 | 176 900 259 | 345 724 120 | 674 725 401 | 1 315 877 914 | 2 565 345 830 | 5 000 289 222 | 9 745 468 546 | 18 992 799 260 |
| 3 | | | | -977 475 | -921 206 | -811 550 | -597 854 | -181 407 | 630 159 | 2 211 726 | 5 293 858 | 11 300 269 | 23 005 467 | 45 816 374 | 90 269 909 | 176 900 259 | 345 724 120 | 674 725 401 | 1 315 877 914 | 2 565 345 830 | 5 000 289 222 |
| 4 | | | | | -1 006 349 | -977 475 | -921 206 | -811 550 | -597 854 | -181 407 | 630 159 | 2 211 726 | 5 293 858 | 11 300 269 | 23 005 467 | 45 816 374 | 90 269 909 | 176 900 259 | 345 724 120 | 674 725 401 | 1 315 877 914 |
| 5 | | | | | | -1 021 165 | -1 006 349 | -977 475 | -921 206 | -811 550 | -597 854 | -181 407 | 630 159 | 2 211 726 | 5 293 858 | 11 300 269 | 23 005 467 | 45 816 374 | 90 269 909 | 176 900 259 | 345 724 120 |
| 6 | | | | | | | -1 028 768 | -1 021 165 | -1 006 349 | -977 475 | -921 206 | -811 550 | -597 854 | -181 407 | 630 159 | 2 211 726 | 5 293 858 | 11 300 269 | 23 005 467 | 45 816 374 | 90 269 909 |
| 7 | | | | | | | | -1 032 669 | -1 028 768 | -1 021 165 | -1 006 349 | -977 475 | -921 206 | -811 550 | -597 854 | -181 407 | 630 159 | 2 211 726 | 5 293 858 | 11 300 269 | 23 005 467 |
| 8 | | | | | | | | | -1 034 671 | -1 032 669 | -1 028 768 | -1 021 165 | -1 006 349 | -977 475 | -921 206 | -811 550 | -597 854 | -181 407 | 630 159 | 2 211 726 | 5 293 858 |
| 9 | | | | | | | | | | -1 035 699 | -1 034 671 | -1 032 669 | -1 028 768 | -1 021 165 | -1 006 349 | -977 475 | -921 206 | -811 550 | -597 854 | -181 407 | 630 159 |
| 10 | | | | | | | | | | | -1 036 226 | -1 035 699 | -1 034 671 | -1 032 669 | -1 028 768 | -1 021 165 | -1 006 349 | -977 475 | -921 206 | -811 550 | -597 854 |
| 11 | | | | | | | | | | | | -1 036 496 | -1 036 226 | -1 035 699 | -1 034 671 | -1 032 669 | -1 028 768 | -1 021 165 | -1 006 349 | -977 475 | -921 206 |
| 12 | | | | | | | | | | | | | -1 036 635 | -1 036 496 | -1 036 226 | -1 035 699 | -1 034 671 | -1 032 669 | -1 028 768 | -1 021 165 | -1 006 349 |
| 13 | | | | | | | | | | | | | | -1 036 706 | -1 036 635 | -1 036 496 | -1 036 226 | -1 035 699 | -1 034 671 | -1 032 669 | -1 028 768 |
| 14 | | | | | | | | | | | | | | | -1 036 743 | -1 036 706 | -1 036 635 | -1 036 496 | -1 036 226 | -1 035 699 | -1 034 671 |
| 15 | | | | | | | | | | | | | | | | -1 036 761 | -1 036 743 | -1 036 706 | -1 036 635 | -1 036 496 | -1 036 226 |
| 16 | | | | | | | | | | | | | | | | | -1 036 771 | -1 036 761 | -1 036 743 | -1 036 706 | -1 036 635 |
| 17 | | | | | | | | | | | | | | | | | | -1 036 776 | -1 036 771 | -1 036 761 | -1 036 743 |
| 18 | | | | | | | | | | | | | | | | | | | -1 036 779 | -1 036 776 | -1 036 771 |
| 19 | | | | | | | | | | | | | | | | | | | | -1 036 780 | -1 036 779 |
| 20 | | | | | | | | | | | | | | | | | | | | | -1 036 781 |