

HSBC Project Finance

Project Belene

Presentation of the Operational Model

PREPARED FOR: BEH



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- As highlighted in Annex II to the Mandate Letter, HSBC is following a two-step approach to the modelling process:
 - **Operational Model:**
 - This first version of the model has been built as an “operational model”
 - The purpose of it is to provide support in structuring negotiations with all parties in the project, including the construction, financial and commercial discussions
 - The model can run different scenarios using the electricity price forecasts provided by NERA’s regional electricity market study
 - While the Operational Model already incorporates all the required functionalities to be converted into a financial model, it contains a large number of assumptions that are still under negotiation (e.g. EPC price escalation, financing terms, financing facilities...).
 - **Financial Model:**
 - HSBC will reflect the agreed financing terms into the Operational Model including final debt to equity structure, size, tenor, applicable margins and other key terms
 - Project and shareholder returns will be analysed under various scenarios

Project Cost Assumptions

Key Assumptions: EPC & Owner's Costs

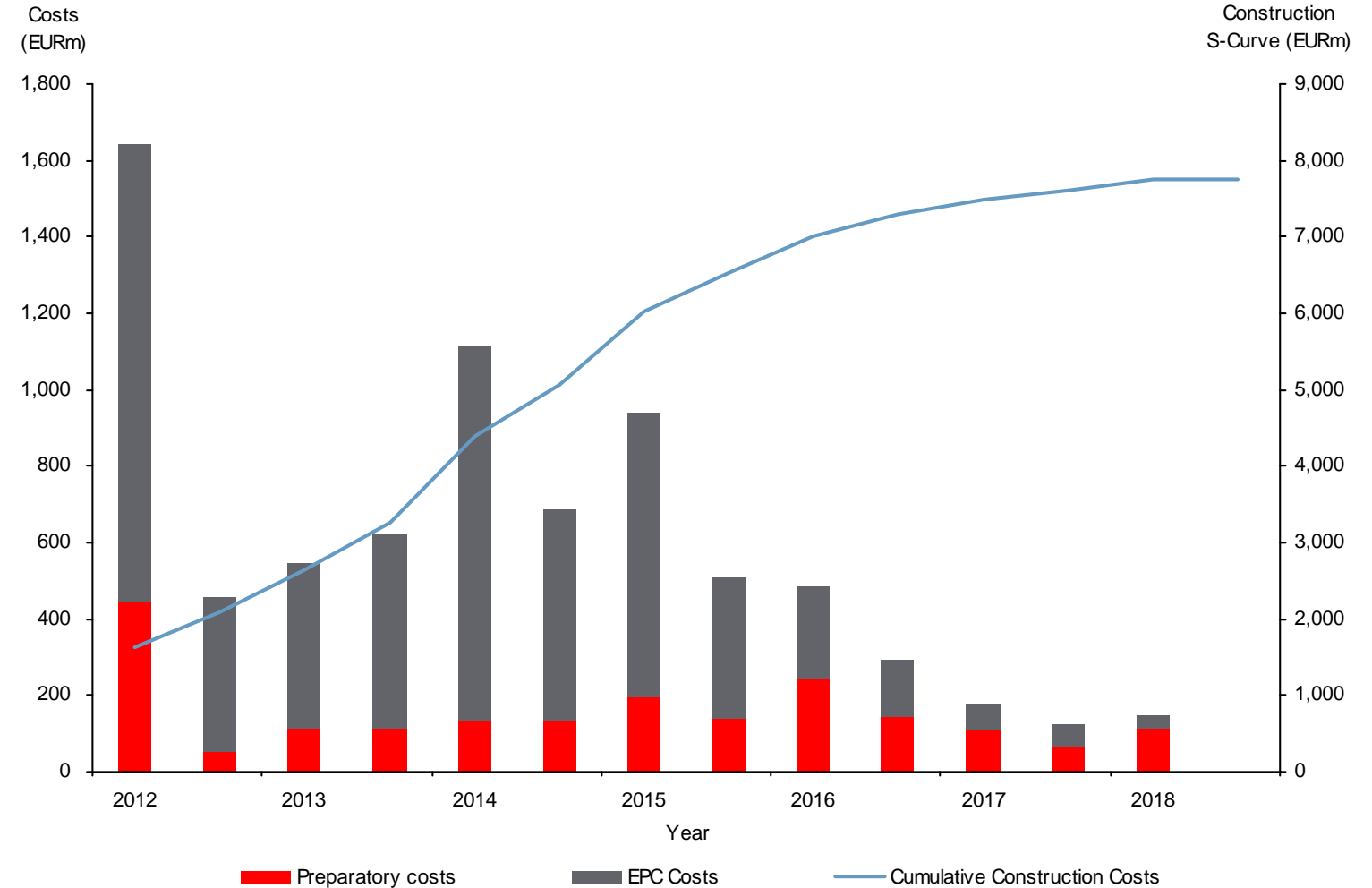
All construction cost assumptions have been provided to HSBC by NEK/WP through the Transfer File

Construction costs have been inflated using a Composite Index for construction costs

The composite index is based on an approximate breakdown of the EPC contract according to the origin of the equipment and services provided:

$COMP = 30.18\% * BG \text{ CPI} + 47.45\% * RUS \text{ CPI} + 22.37\% * EU16 \text{ CPI}$

Construction costs (nominal)



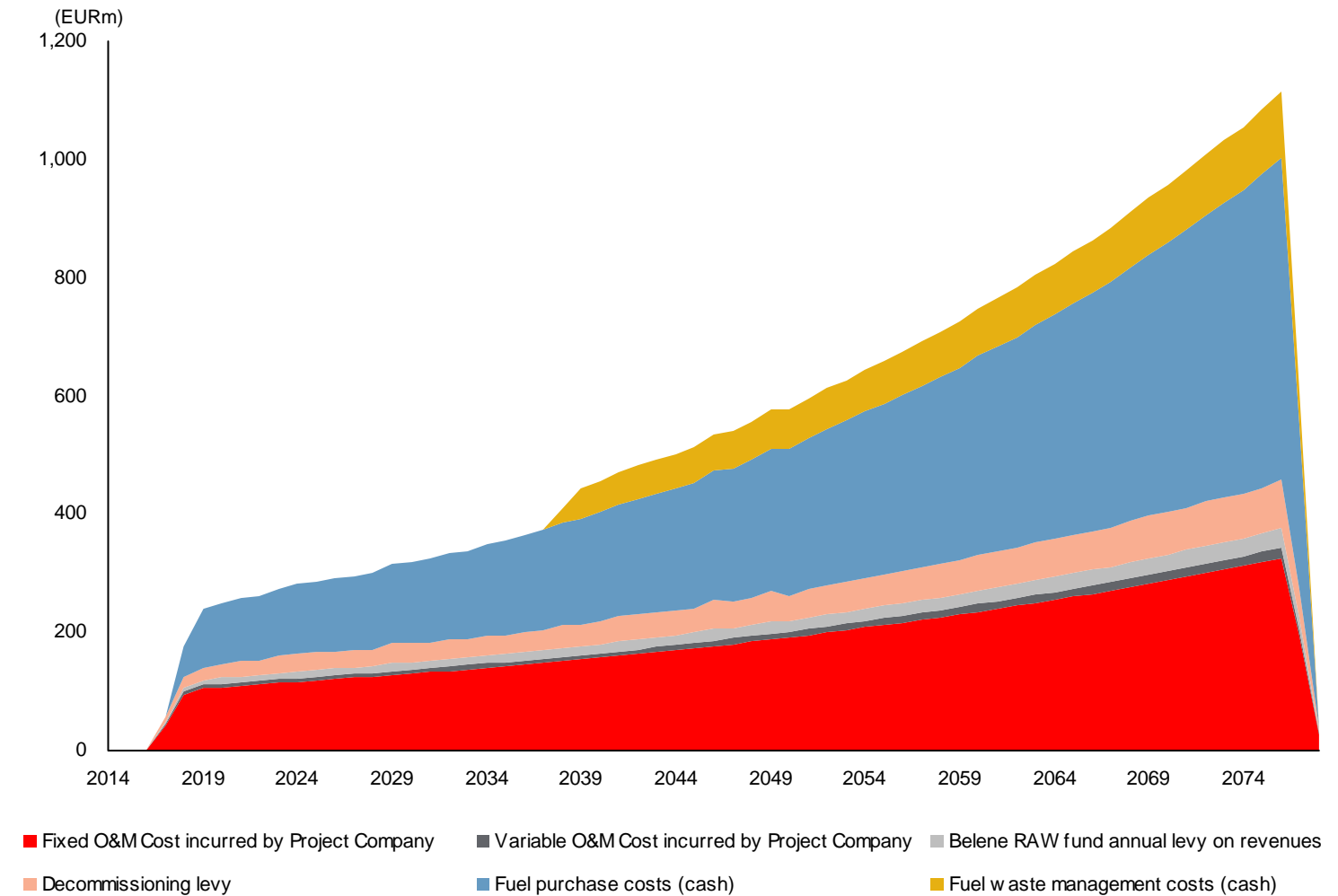
Key Assumptions: Fixed O&M, Variable O&M and Fuel Costs



The Financial model has been populated with the O&M cost data provided to HSBC via NEK by Kozloduy NPP

Tax and accounting require validation by external experts

O&M and fuel costs



Capital Structure & Financing Assumptions

Financing: Capital Structure



The debt financing is assumed to be entirely sourced from a single commercial EUR facility

In scenario 1, we have assumed project gearing (Debt:Equity) of 60%:40%

The funding cascade in the model currently assumes pro-rata draw-downs of debt and equity

Early revenue from Unit 1 during construction is used as a funding source

The preparatory works costs include costs incurred by NEK to date and other estimated (non-EPC) costs to be incurred

The total Project Costs amount to EUR 10.35bn

Sources and uses of funds during construction

		(EUR'000)
Uses		
Total EPC Costs	59.23%	6,131,552
Total Preparatory Works Costs	19.49%	2,017,517
Facility A: Interest during construction and fees	17.48%	1,809,456
Prefunded Debt Service Reserve Account (DSRA)	2.17%	225,000
BE 1: Costs (O&M, working capital, tax)	1.64%	169,439
Total uses	100.0%	10,352,964
Sources		
Facility A	57.41%	5,943,267
Equity	38.27%	3,962,178
BE 1: Revenue before COD	4.32%	447,518
Total sources	100.00%	10,352,964

Financing: Debt Financing Assumption

The model currently assumes a single commercial facility which is fully amortised over a 26 years door to door tenor

Margins on the commercial tranche is assumed to be 350 bps during construction and 325 bps increasing with 25 bps ratchet thereafter

Debt financing assumptions

Project Gearing (D/D+E)		60.0%
Capital structure		Facility A
Facility size		5,943,267
As % of total funding requirement		60.0%
Fees		
Arrangement fee		200 bps
Commitment fee		163 bps
Repayments		
Grace period		6 Months
First repayment due		01-Sep-18
Target tenor (door-to-door)		26 Years
Final repayment (target)		30-Sep-37
Final repayment (actual)		31-Dec-37
Tenor (door-to-door)		26 years
Average Loan Life (door-to-door)		18.1 years

Margins		
During construction	350 bps	
Margin 1	325 bps	1 Mar 17 - 28 Feb 22
Margin 2	350 bps	1 Mar 22 - 28 Feb 27
Margin 3	375 bps	1 Mar 27 - 29 Feb 32
Margin 4	400 bps	1 Mar 32 - 28 Feb 62

Results Analysis

Levelised Electricity Cost Comparison (US\$/MWh)

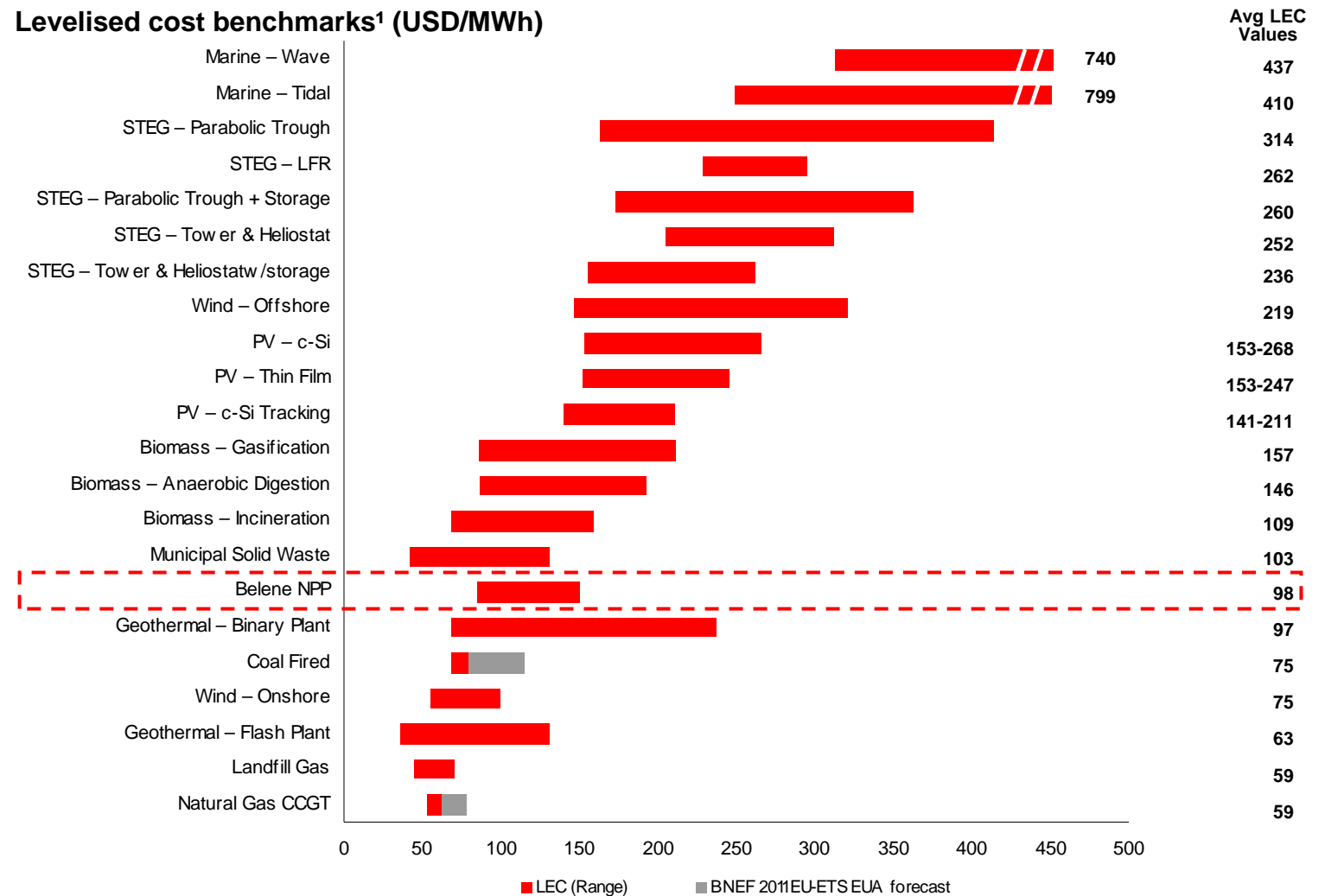
The Levelised Electricity Cost is the ratio of the net present value of total costs to the net present value of the corresponding expected plant output (in MWh), starting at Financial Close and going through until the end of the project operational life

Overnight capital cost (BE 1 & 2)	8,149,069
EUR/kW installed	3,844
Total energy generation (MWh) - BE 1&2	954,543,446
Avg / year	15,898,894
LEC @ 8.23% discount rate (EUR/MWh)	74.9
LEC @ 8.23% discount rate (USD/MWh)	98.4
Average operating costs (Eurocents/kWh)	1.210

Source: Bloomberg New Energy Finance Q3 2011
Note:

(1) Data for comparison purposes are indicative only as they are not specific to Bulgaria

Levelised cost benchmarks¹ (USD/MWh)



Levelised Electricity Cost Sensitivity Analysis

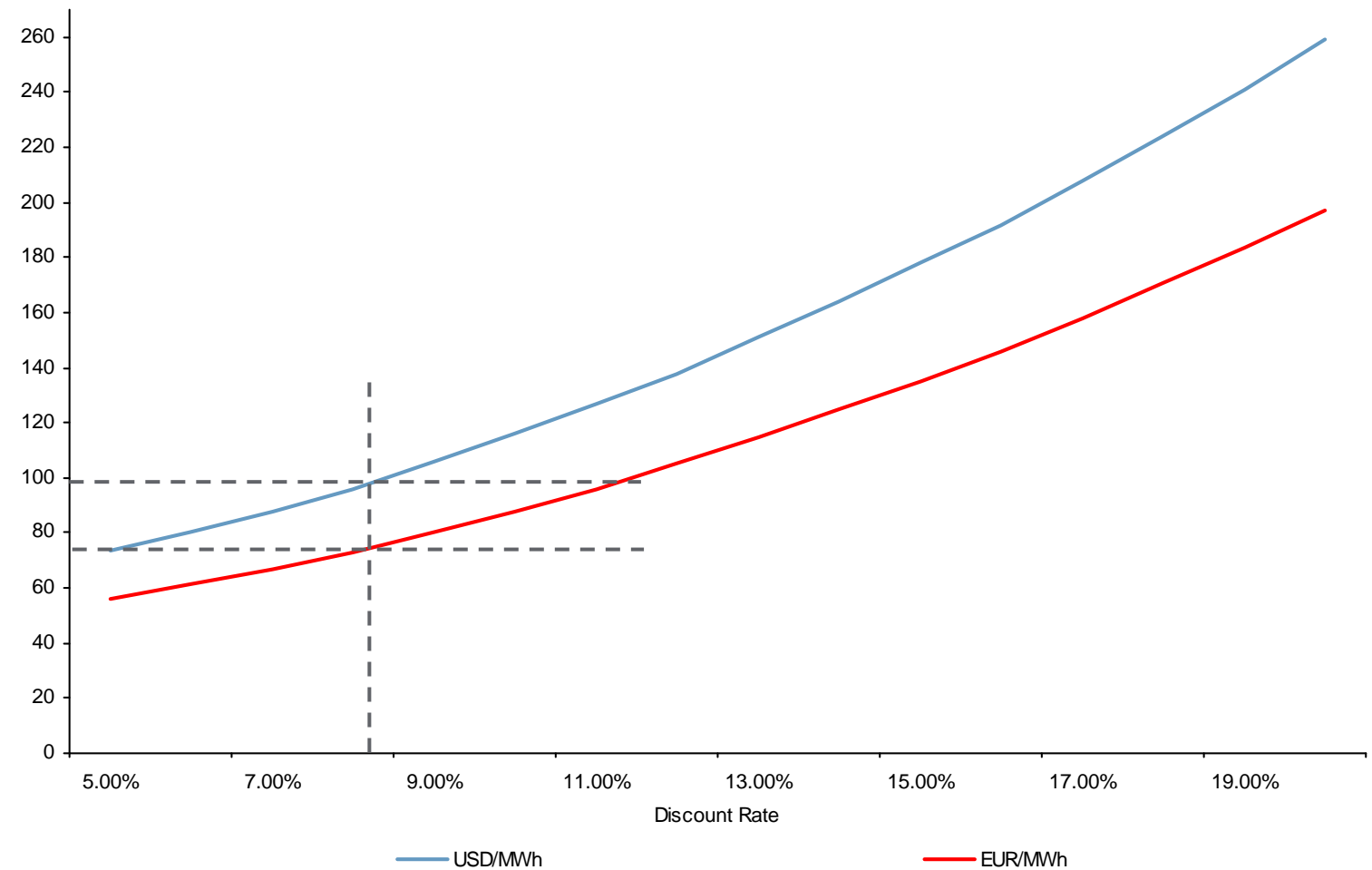
As demonstrated on the graph, the LEC is heavily dependent on the chosen discount rate

A change of 1% to the discount rate implies an average change of EUR9.38/MWh or USD12.33/MWh to the LEC

Therefore, comparison across technologies can be difficult due to different financing assumptions

The data presented on the previous slide should be adjusted to reflect projects undertaken by NEK in Bulgaria and their WACC adjusted accordingly

Belene Levelised Electricity Cost¹



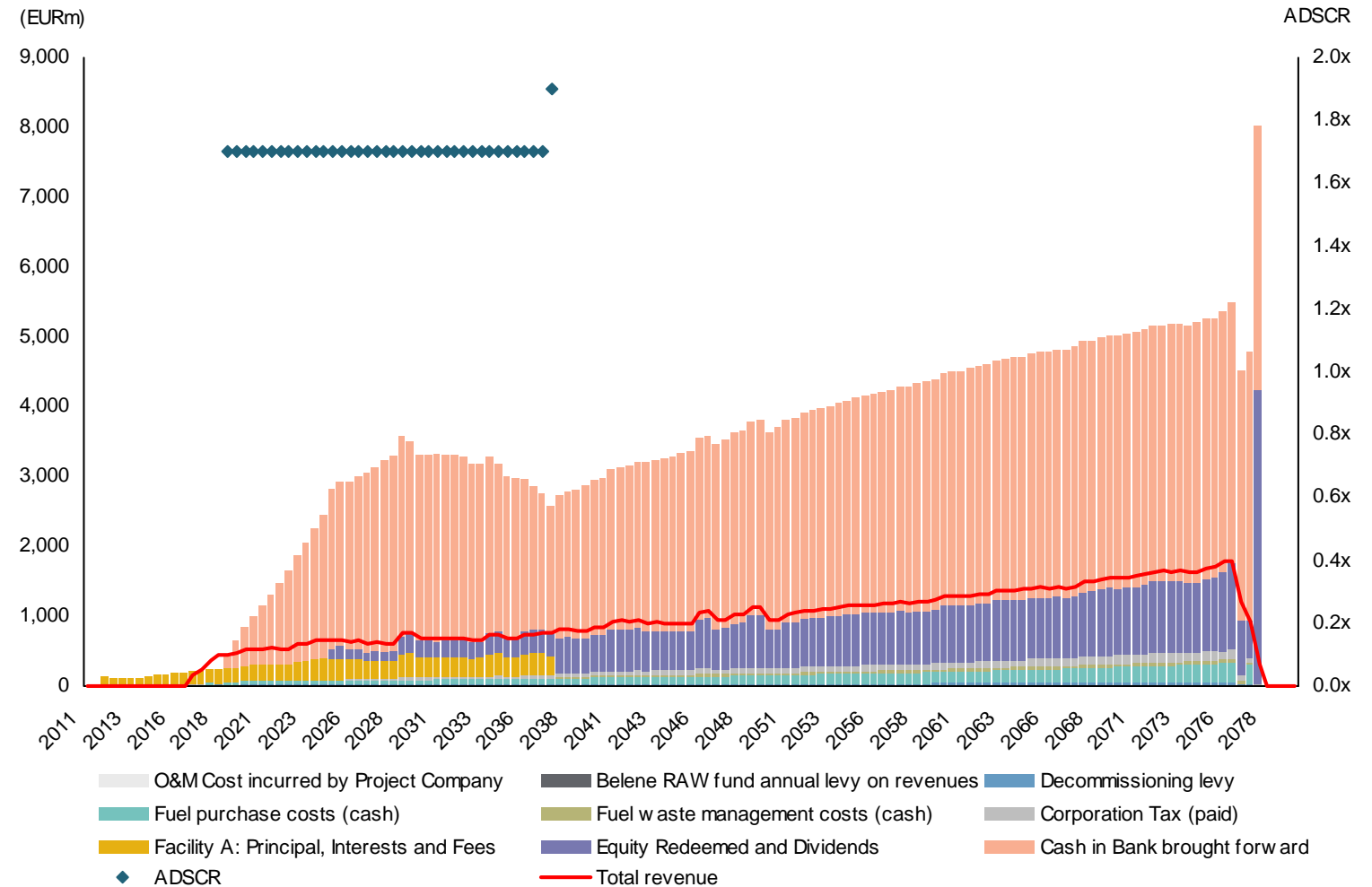
Note:
 (1) For illustrative purposes under composite EPC price escalation and low CO₂ price

Scenario Cash Flows and DSCRs

We optimize the model with the following constraints:

- Debt service cover ratio of 1.70x
- Senior debt tenor of 25.5 years door to door
- Debt to equity gearing of 60%

Scenario Cash Flows and ADSCR



Sensitivity Results

	Composite EPC Low CO2 Price	Composite EPC Current Policies	Composite EPC New Policies	Composite EPC Decoupled Gas	Composite EPC Low CO2 Price Debt Margins + 1%
Levelised Electricity Cost (EUR per kWh) at 8.23% discount rate	0.0749	0.0747	0.0747	0.0747	0.0787
EUR/kW installed	3,844	3,844	3,844	3,844	3,844
Gearing (%)	60	60	60	60	60
Min DSCR	1.7x	1.7x	1.7x	1.7x	1.7x
Senior Debt	5,943 m	5,905 m	5,880 m	5,907 m	6,156 m
Debt Tenor (years)	26	20	19	24	30
Equity	3,962 m	3,937 m	3,920 m	3,938 m	4,104 m
Total Senior Debt and Equity	9,905 m	9,842 m	9,800 m	9,846 m	10,260 m
Capex Costs	6,131 m	6,131 m	6,131 m	6,131 m	6,131 m
Preparatory Costs	2,018 m	2,018 m	2,018 m	2,018 m	2,018 m

Sensitivity Results



	Composite EPC Low CO2 Price Debt Margins - 1%	EU 16 Eurostat EPC Low CO2 Price	RUS CPI EPC Low CO2 Price	Composite EPC Low CO2 Price Construction cost +25%	Composite EPC Low CO2 Price Construction cost +50%
Levelised Electricity Cost (EUR per kWh) at 8.23% discount rate	0.0712	0.0644	0.0814	0.0940	0.1137
EUR/kW installed	3,844	3,121	4,297	4,805	5,766
Gearing (%)	60	60	60	60	60
Min DSCR	1.7x	1.7x	1.7x	1.7x	1.7x
Senior Debt	5,743 m	4,820 m	6,648 m	5,943 m	5,943 m
Debt Tenor (years)	23	21	30	26	26
Equity	3,829 m	3,213 m	4,432 m	6,010 m	8,056 m
Total Senior Debt and Equity	9,572 m	8,033 m	11,079 m	11,954 m	13,999 m
Capex Costs	6,131 m	4,631 m	7,079 m	7,664 m	9,197 m
Preparatory Costs	2,018 m	1,986 m	2,032 m	2,522 m	3,026 m

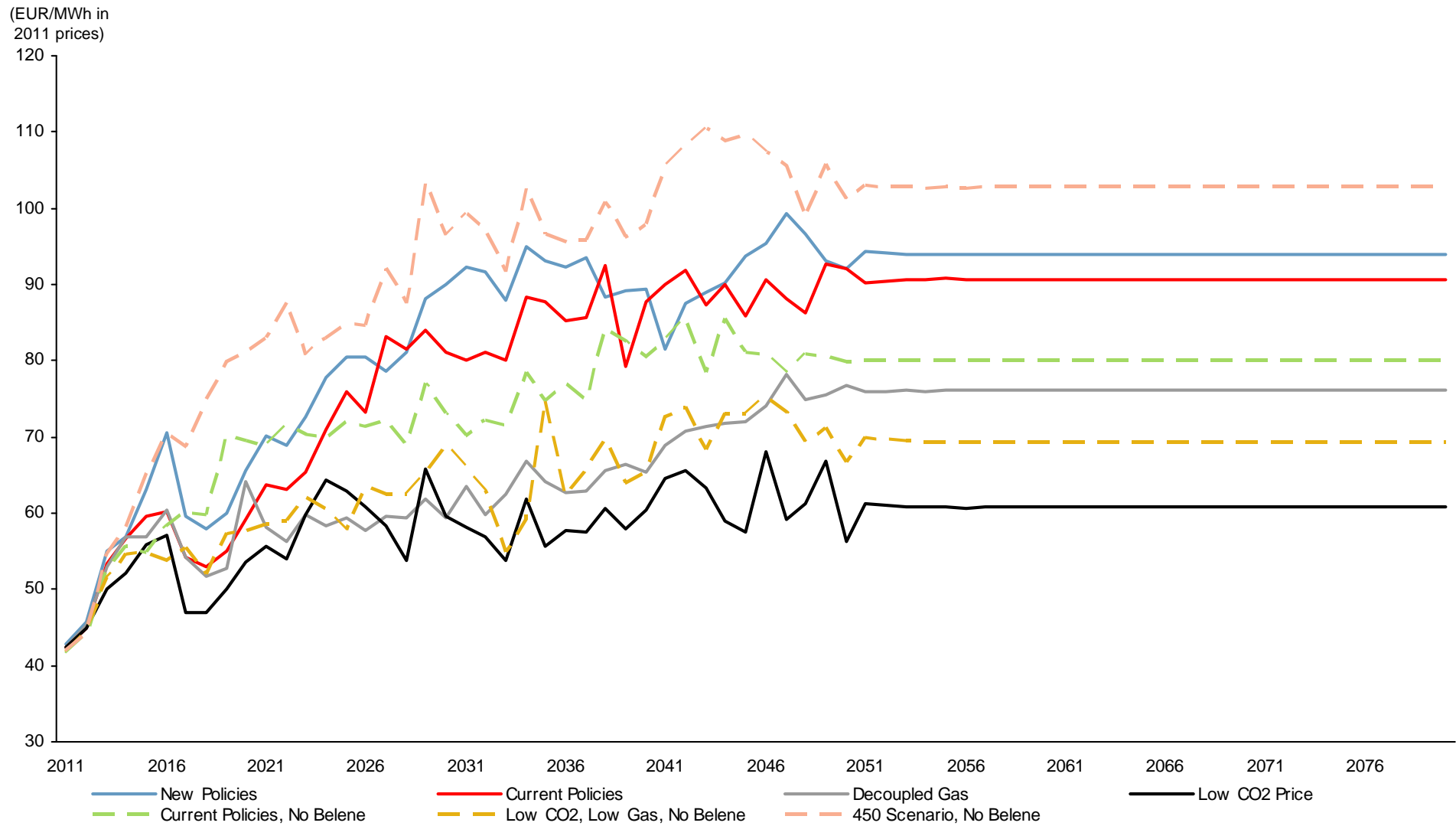
Conclusion

Conclusion

- The Operational Model has been built to show the value drivers for Belene NPP with the flexibility to run operating as well as financial sensitivities
- The model incorporates operating assumptions provided by:
 - Atomstroyexport
 - WorleyParsons
 - Kozluduy NPP
- In the absence of an agreed EPC contract and negotiated capital structure, HSBC has made a number of financing assumptions based on current market comparables for illustrative purposes
- Once financing terms have been agreed, they will be incorporated in the model to produce the Financial Model, which will serve as a decision making tool for BEH/NEK

Appendix

Power Price Forecasts



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