BIOPLAT-EU

Promoting sustainable use of underutilized lands for bioenergy production through a web-based Platform for Europe

D6.1

Report on the detailed description of a financial proposition and accompanying model

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Project no.	818083
Project acronym:	BIOPLAT-EU
Project title:	Promoting sustainable use of underutilized lands for bioenergy production through a web-based Platform for Europe
Call:	H2020-LC-SC3-2018-RES
Start date of project:	01.11.2018
Duration:	36 months
Deliverable title:	D6.1- Report on the detailed description of a financial proposition and accompanying model
Due date of deliverable:	30 June 2021
Project Coordinator:	WIP Renewable Energies

Organisation name of lead contractor for this deliverable: 1to3 Capital (*11*)

Name	Organization
Marc Buiting *Deltcho Vitchev* *Anna Lapinska*	*1to3 Capital*

Dissemination level		
PU	Public	x
CO	Confidential, restricted under conditions set out in Model Grant Agreement	
CI	Classified, information as referred to in Commission Decision 2001/844/EC	

History			
Version	Date	Reason	Revised by
01	05/07/2021	First draft	1to3
02	07/07/2021	Revised	WIP

Table of Contents

P.S.: the Excel model itself is available at this link.

INTRODUCTION

- This presentation sets out a financial proposition with the use and the role of a generic excel-based shadow-model applicable the bio-energy projects from MUC lands / the BIOPLAT-EU Consortium.

- A 'shadow'-model generally re-models a proposition by using the assumptions of a business case from the original model or from Project Identification Forms (please refer to Report D6.3) to derive at independent forecasted financial statements. The original model can be from developers of projects, engineering firms, equity providers, fund managers, banks, etc. This way propositions are independently standardized.

- The structure of this Model-presentation is the following:

  I. Part I is the introduction to the Financial Proposition
  II. Part II describes the input-structure and links into the Model in full,
  III. Part III describes the functions of the model dependent on the model choices (i.e. its 'use') and will detail bankability considerations, and
  IV. Part IV describes preliminary business cases (which will be reported separately in Report D6.4).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

PART I FINANCIAL PROPOSITION

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

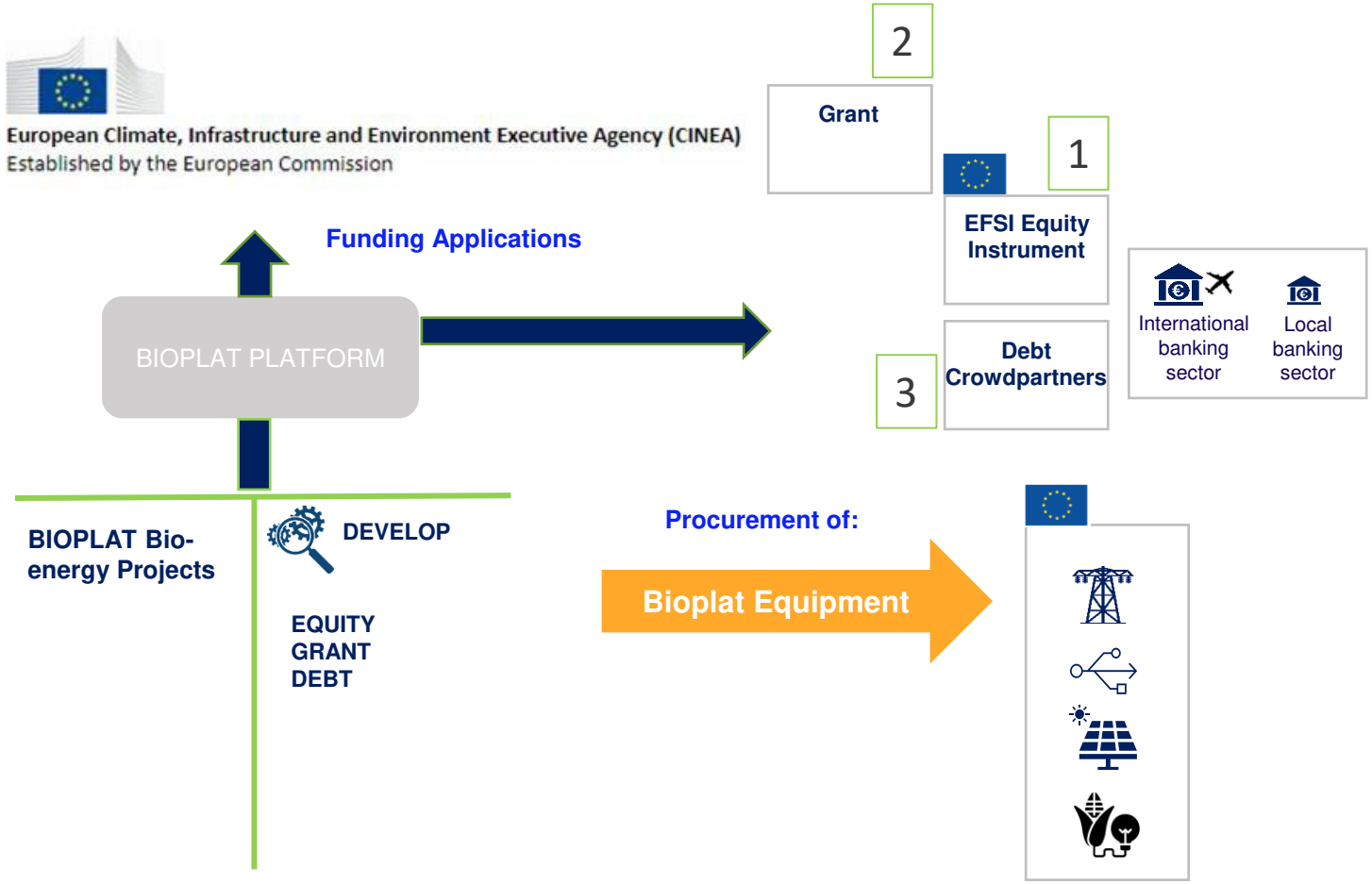
The Finance Proposition was threefold

The BIOPLAT Consortium took three routes to finance:

1) An equity fund application for the BIOPLAT-EU projects to secure development monies and equity
2) Preparation for applications with the Innovation Fund for those BIOPLAT projects eligible from an innovation perspective (2G for example)
3) Debt finance route through syndicated crowdfunding through the crowdfunding of 'Crowdpartners' to reach out to more European crowdfunding sites (initially 'CitizEnergy' was mentioned to be used for that).

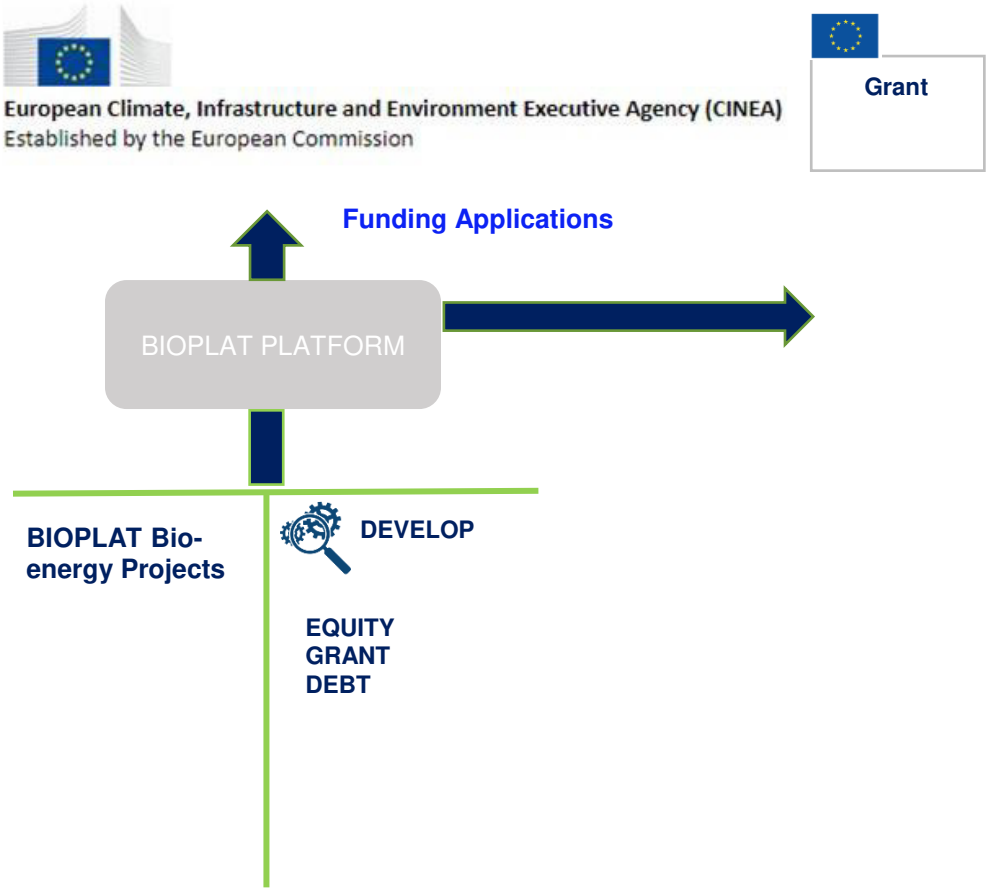
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

THE FINANCE PROPOSITION WAS THREEFOLD



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Option of Grant Application Innovation Fund (2021)
Status: Awareness Raising Consortium-partners



NEWS ARTICLE | 12 MARCH 2021 | INNOVATION AND NETWORKS EXECUTIVE AGENCY

Innovation Fund call for small-scale projects received 232 project proposals requesting EUR 1 billion

The Innovation Fund call for small-scale projects launched on 1 December 2020, closed on 10 March 2021 with more than 230 proposals

Details

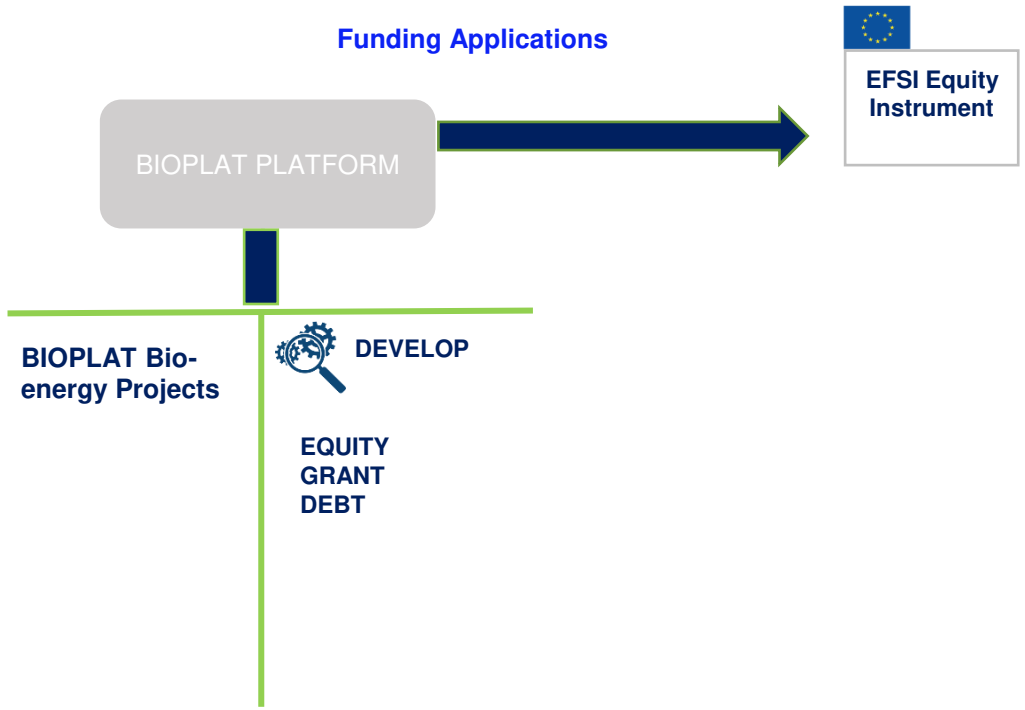
Publication date 12 March 2021

Author Innovation and Networks Executive Agency

INEA has received 232 project proposals by the deadline of 10 March 2021 for the first call for small-scale projects requesting a bit more than €1 billion from the Innovation Fund, 10 times more than the available budget.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Option of Equity Fund Application EFSI (2020) Status: Rejected



EUROPEAN INVESTMENT FUND

Marc Buiting
1to3 RE Elements Fund
buiting@1to3capital.com

Luxembourg, 23 March 2021
CE/EIG/ITI/2021-259266

Re: 1to3 RE Elements Fund

Dear Mr. Buiting,

Thank you for having approached the European Investment Fund with the proposition to invest in the 1to3 RE Elements Fund. Further to your conversation with Neven Tkalcec and Céline Barbot and after a full review, we regret to inform you that we will not be in a position to proceed with your investment proposal.

We wish you well in completing the financing required to close your Fund, and hope to find another opportunity to work with you in the future.

Yours sincerely,

EUROPEAN INVESTMENT FUND

U. Grabenwarter
Deputy Director
Equity Investments & Guarantees

P. Gresko
Head of Division
Equity Investments & Guarantees

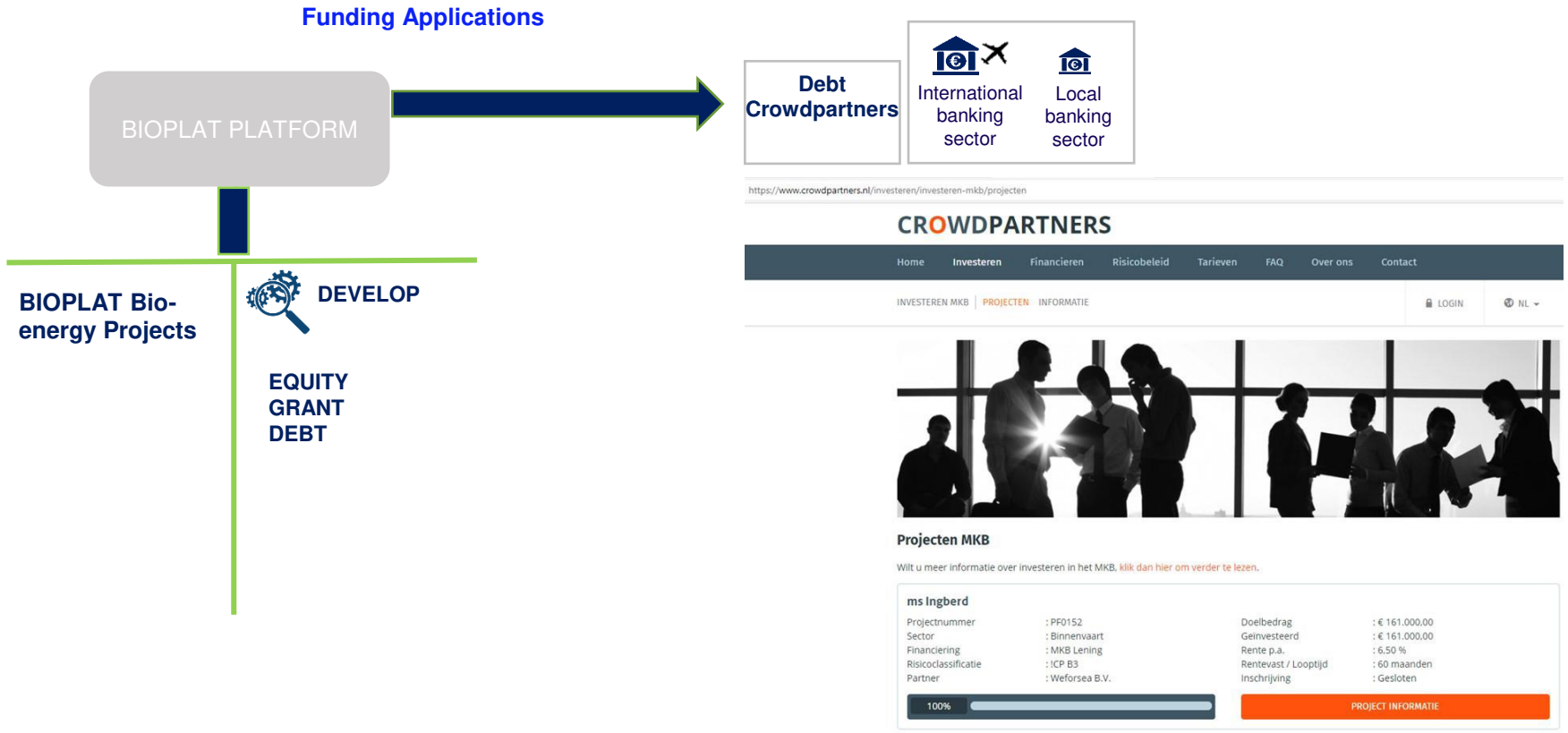
37B avenue J.F. Kennedy
L-2968 Luxembourg

tel +352 24 85 1
fax +352 24 85 81 200

e-mail info@eif.org
web www.eif.org

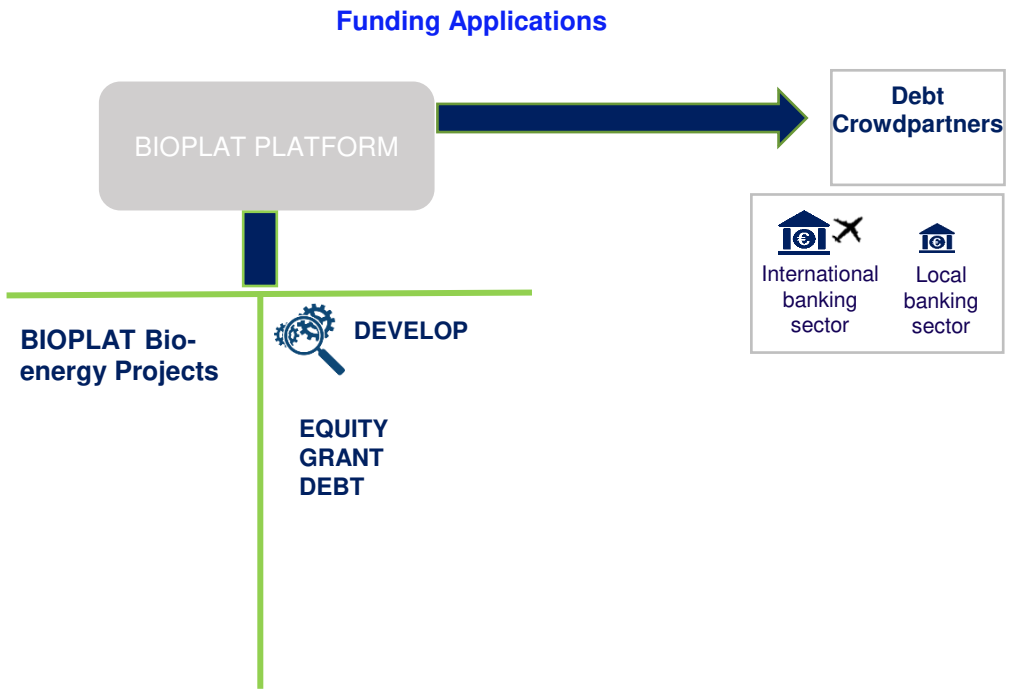
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Option of Equity Fund Application EFSI (2020)
Status: Usage Tuitions Maintained 2018-2020 & Traction with RE Projects (2* Solar)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

OPTION OF EQUITY FUND APPLICATION EFSI (2020)
STATUS: PROMOTION SYNDICATED / DISTRIBUTED CROWDFUNDING



Technical Notes on Energy-Digital Nexus for Minigrids

Technical Note 3: Crowdfunding

Energy and digitalisation act as accelerators and enablers of many, perhaps all of the SDGs, playing an important role in improving access to public services, protecting the environment, addressing climate change, promoting agriculture, contributing to an inclusive, sustainable development and to job creation. In order to empower development you need to:

- Increase access to affordable, reliable, sustainable and modern energy.
- Increase renewable energy generation and energy efficiency.
- Contribute to the fight against climate change.

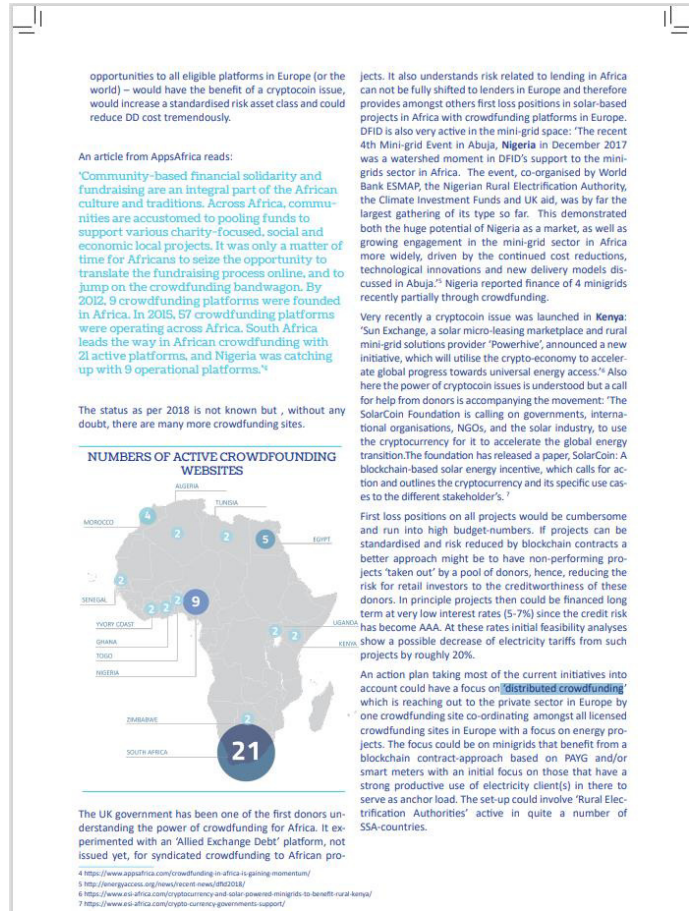
In this new era of energy transition and digital transformation, the idea of a nexus between digital solutions and the energy sector emerges. Digitalisation proves to have a potential in boosting results of the work in the energy sector by building energy systems, which are now more intelligent, efficient, reliable, safe, sustainable and cost-effective.

At the same time, more than 1 billion people still do not have access to electricity with most of them living in rural areas of developing countries. In Sub-Saharan Africa alone, off-grid systems are projected to provide access to nearly 65% of the newly electrified population[1].

Autonomous minigrids (small-scale power supply networks) are able to provide power for residential loads, as well as effectively power a vast array of apparatuses and equipment, directly associated with economic development. These productive uses of energy emerge as a development driver in rural areas of the developing world. This, in turn, leads to job creation and poverty alleviation.

Productive uses of electricity are agricultural, commercial and industrial activities involving electricity services as a direct input to the production of goods or provision of services. The financing of minigrids still poses considerable difficulties, leading to a slow increase in the number of new installed systems. Digitalisation provides novel solutions that decrease costs and improve service for rural electrification minigrids. Different digital technologies combinations could be applied to all stages of a mini-grid project development, implementation and operation including the actual financing. A combination of digital technologies paradigms presents the potential to make mini-grid investments in the developing world more viable in economic terms.

1 Dagnachew, A.G.; Lucas, P.L.; Hof, A.F.; Gernaat, D.E.H.J.; de Boer, H.-S.; van Vuuren, D.P. The role of decentralised systems in providing universal electricity access in sub-saharan Africa—A model-based approach. Energy 2017, 139, 184–195.



opportunities to all eligible platforms in Europe (or the world) – would have the benefit of a cryptocoin issue, would increase a standardised risk asset class and could reduce DD cost tremendously.

An article from AppsAfrica reads:

'Community-based financial solidarity and fundraising are an integral part of the African culture and traditions. Across Africa, communities are accustomed to pooling funds to support various charity-focused, social and economic local projects. It was only a matter of time for Africans to seize the opportunity to translate the fundraising process online, and to jump on the crowdfunding bandwagon. By 2012, 9 crowdfunding platforms were founded in Africa. In 2015, 57 crowdfunding platforms were operating across Africa. South Africa leads the way in African crowdfunding with 21 active platforms, and Nigeria was catching up with 9 operational platforms.'[4]

The status as per 2018 is not known but , without any doubt, there are many more crowdfunding sites.

NUMBERS OF ACTIVE CROWDFOUNDING WEBSITES

The UK government has been one of the first donors understanding the power of crowdfunding for Africa. It experimented with an 'Allied Exchange Debt' platform, not issued yet, for syndicated crowdfunding to African projects. It also understands risk related to lending in Africa can not be fully shifted to lenders in Europe and therefore provides amongst others first loss positions in solar-based projects in Africa with crowdfunding platforms in Europe. DFID is also very active in the mini-grid space: 'The recent 4th Mini-grid Event in Abuja, **Nigeria** in December 2017 was a watershed moment in DFID's support to the mini-grids sector in Africa. The event, co-organised by World Bank ESMAP, the Nigerian Rural Electrification Authority, the Climate Investment Funds and UK aid, was by far the largest gathering of its type so far. This demonstrated both the huge potential of Nigeria as a market, as well as growing engagement in the mini-grid sector in Africa more widely, driven by the continued cost reductions, technological innovations and new delivery models discussed in Abuja.'[5] Nigeria reported finance of 4 minigrids recently partially through crowdfunding.

Very recently a cryptocoin issue was launched in **Kenya**: 'Sun Exchange, a solar micro-leasing marketplace and rural mini-grid solutions provider 'Powerhive', announced a new initiative, which will utilise the crypto-economy to accelerate global progress towards universal energy access.'[6] Also here the power of cryptocoin issues is understood but a call for help from donors is accompanying the movement: 'The SolarCoin Foundation is calling on governments, international organisations, NGOs, and the solar industry, to use the cryptocurrency for it to accelerate the global energy transition.The foundation has released a paper, SolarCoin: A blockchain-based solar energy incentive, which calls for action and outlines the cryptocurrency and its specific use cases to the different stakeholder's. '[7]

First loss positions on all projects would be cumbersome and run into high budget-numbers. If projects can be standardised and risk reduced by blockchain contracts a better approach might be to have non-performing projects 'taken out' by a pool of donors, hence, reducing the risk for retail investors to the creditworthiness of these donors. In principle projects then could be financed long term at very low interest rates (5-7%) since the credit risk has become AAA. At these rates initial feasibility analyses show a possible decrease of electricity tariffs from such projects by roughly 20%.

An action plan taking most of the current initiatives into account could have a focus on 'distributed crowdfunding' which is reaching out to the private sector in Europe by one crowdfunding site co-ordinating amongst all licensed crowdfunding sites in Europe with a focus on energy projects. The focus could be on minigrids that benefit from a blockchain contract-approach based on PAYG and/or smart meters with an initial focus on those that have a strong productive use of electricity client(s) in there to serve as anchor load. The set-up could involve 'Rural Electrification Authorities' active in quite a number of SSA-countries.

4 https://www.appsafrica.com/crowdfunding-in-africa-is-gaining-momentum/
5 http://energyaccess.org/news/recent-news/dfid2018/
6 https://www.esi-africa.com/cryptocurrency-and-solar-powered-minigrids-to-benefit-rural-kenya/
7 https://www.esi-africa.com/crypto-currency-governments-support/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

PART II FINANCIAL MODEL

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part II

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Role Financial Model

- Without a financial model there will not be finance
- A financial model is a business plan that is annexed to a loan agreement ('lenders' base case')
- Sponsors / developers of projects or corporates should have their own financial model: developed themselves, found on the internet, bought from a boutique, bought from a professional player or developed by its (often) technical advisor used for feasibility analysis ("Developer's Model")
- A lender can use the Developer's Model for its credit application internally although that is not 'ideal', to put it mildly, since the Developer's Model represents the business case from the perspective of the developer / owner and is therefore often overly enthusiastic in terms of profitability
- The same applies for regulators although the stakes are much higher: the LCOE calculations often serves periods of 20 to 25 years under feed-in programs and/or power purchase agreements ("PPA")

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Role Financial Model

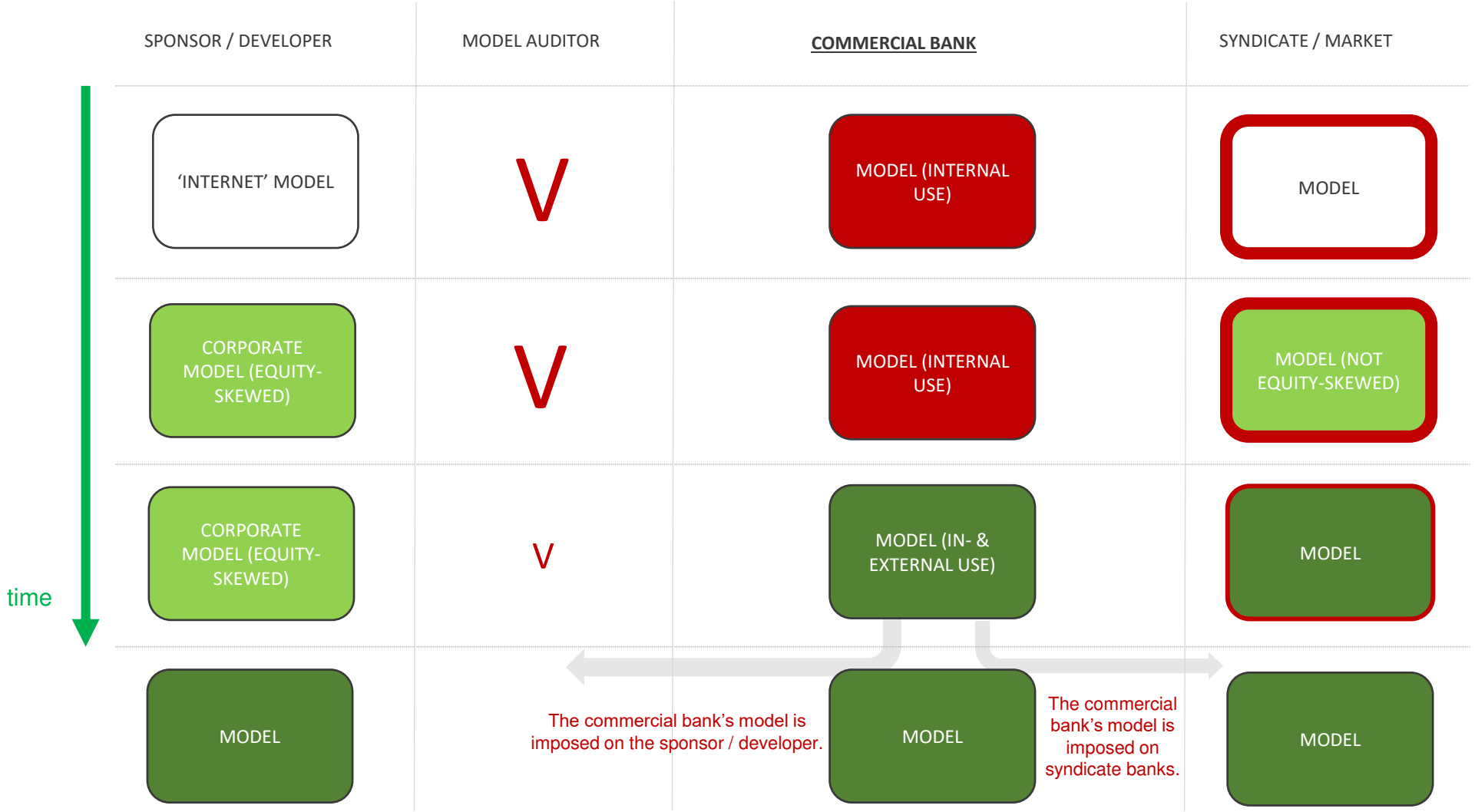
- Commercial banks entering 'structured finance' therefore rapidly develop their own model which is initially used for internal purposes. After a couple of (limited) syndication transactions their own in-house model may replace a developer's model for syndication purposes. That way their syndication clients are served in a standardized way all the time and the commercial bank is controlling information dissemination (and can 'underwrite' or at least act on behalf of other banks). After the model has been tested and used more often, a commercial bank may even impose its model to new developers / projects to control risks and time (!) to highest extent. Some commercial banks, a selected group of banks in Europe, have an Advanced Internal Rating-Based (AIRB) status based on outstanding internal financial modelling. This obviously is reflected in dealings with clients and underwriting as well.

- Renewable energy still often needs funding from development banks because of specific risks which have not become assessed often like those risks related to certain bio-energies (2G) or projects that involve green hydrogen. Development banks do not underwrite (they are 'equals' amongst themselves and underwriting on behalf of non-developing banks would imply they assume the same risk position which violates their 'additionality' birth-right), but they can syndicate. Apart from IFC, and maybe EIB, developing banks are not in the business of preparing info memo's, models, etc. that generally speaking accompany an underwriting role. Even the number of developing banks having its own in-house model is limited, leave alone such could be passed on in syndication (and imposing it on developers is even further away) and for certain not for 'free' – part of an expensive 'Mandated Lead Arranger'-service in such case. 'Lenders of last resort' do not 'advise' since then it would be difficult to turn down a loan request. Instead, in most cases, Developer's Model is used for syndication *after* (expensive) external model auditing.

- The same applies for regulators. If they make a model available in an auction it is not meant to be the basis for the lending documentation. They cannot impose a full model but can set model-requirements instead.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

EVOLVEMENT FINANCIAL MODEL: SCHEMATICALLY



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

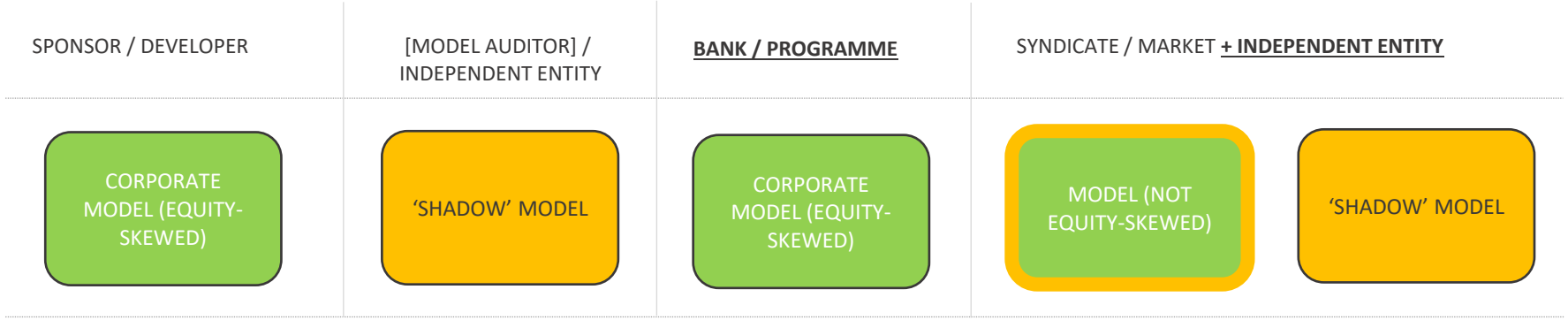
Role Shadow-Model

- To save cost and time ideally an independent entity standardizes model + business plan preparation so developing banks can process applications which are more or less similarly presented (i.o. say receiving 100 proposals per annum with 100 different underlying excel-models that cannot be put in an in-house model, if available anyway, one could imagine developing banks will always receive an analysis from the same shadow-model). Such entity would improve developer's model / business plan in drafting the shadow model for a project.

- Developer's Model + shadow model, including a financial-analysis words-document + words-based business plan, would ideally be close to a credit application document. Audit cost and time are decreased substantially or in full. Developer's Model benefits as from the beginning from a shadow model which is an 'end-product' in itself (= fully developed and tested) and preferably would need to have represented dozens of projects at financial close.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Role Shadow Financial Model



- An independent shadow model has the advantage of a standardized approach to lenders and investors: they would receive next to Sponsor/Developer models the same Shadow Model all the time.
- In drafting the Shadow Model the Sponsor / Developer Model is mirrored 100% for use of the underlying assumptions. If all assumptions are understood there are no differences in both models' outcomes from an equity, debt and regulator's perspective. This integrated auditing process saves a lot of time as well.
- Ideally, the Shadow Model is made available as a 'public service' allowing it to accelerate lending and investing to renewable energy projects which is precisely the function of the BIOPLAT-Model.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

SET-UP OF BIOPLAT-MODEL

- It is recommended to take notice of the information at the 'read-me' sheet ('I' – sheet):

		INSTRUCTIONS
	=	Go to relevant cell.
	=	Back to top.
Q-A	=	Limited input for quick-scan and third party fill-out; linked to 'Project 50' at A-sheet, hence, full model functions available.
A	=	Full re-modelling of sponsor-model; full DD and bankability analysis.
C-A	=	Allows the construction period to be manually inputted to accurately reflect spending during construction but also allows for any restructuring of transactions due to delay, etc.
SUM	=	Very limited input for quick-scan and third party fill-out; full model functions available but only for 1 project.
B-UP	=	Any of the 50 working projects at the A-Sheet can be back-up-ed for future use. Assumptions of a re-used project selected at B-UP are placed as 'Project 49' at the A-Sheet.
		There are no limits to the number of back-ups, hence, 100's of projects' assumptions can be stored.
		A project is chosen by hitting the button on top of respective column at the A-sheet.
		By using the button the model performs some macro-functions to avoid circular references. If the projectnr is filled out instead of using the button at A:C6 the macro's are not used.
		The model should not be re-named; also not saved as 'copy of'.
		Each new version of the model replaces the preceding one. Best is to make a project-folder where each subsequent version is saved and which replaces the earlier one.
		All assumptions are to be filled-out on 'A'ssumptions (A) or at Q-A for high-level input of basic project-parameters (feeds into the A-sheet at Project 50).
		A very high-level input is also provided at the summary sheet; if used the model functions for this project only, not for 50 projects.
		It is recommended to update the model after adjustments or new input by hitting the 'update' or project button at the A-sheet (the one 'with sculpting' in case applicable).
		Only in case of specific manual input during the construction period assumptions are to be filled out at the 'C'onstruction-'A'ssumption-sheet (C-A).
		The model is capable to report in one of three currencies: USD, EUR and LCY.
		Input can be in any of these currencies as well and can differ from the reporting currency per line-item.
		Input can be chosen as being in 1 currency which overrules any other choice throughout the model.
		At the C-A manual input per line item in three currencies is possible, for example part of machinery cost in EUR, USD and LCY.
		Power Purchasing Parity is underlying foreward looking forex movements.
		Sensitivities can be performed on any of the 50 projects, separately from the project active.
		Sensitivities are shown in pre-set tables at 'S'ensitivity-sheet (S) or, if individual parameters are chosen, the result shows in the model-output itself.
		If all sensitivities are ran the button should be used at the A-sheet at cell A-7. It will run all sensitivities on the projectnr inserted in cell B7 at A-sheet.
		If sensitivities are ran senior debt should not be in a sculpted mode.
		Individual sensitivities can be run be hitting the respective buttons at S.
		Impacts on DSCR, equity IRR's and NPV's are calculated as sensitivities, including any shortfall in cash.
		The ToC-sheet indicates which modules can be used in this version of the model.
		The model is designed as 'shadow'-model *: quick but as well detailed analysis of sponsor's model for biddings, for DD, for restructurings, etc.
		The model is similar in use for any infrastructure-type of project (hospitals, water, energy, etc.) but will require some limited adjustments per sector.
		To ensure not an assumption is still in some cell irrelevant for the project analysed a sheet is added to quickly check filled-out cells ('A'ssumption-'O'verview; A-O).
		The version of the A-O sheet is not meant to summarize project assumptions.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

STRUCTURE OF THE MODEL

OVERVIEW ASSUMPTION-SHEET 'A'

1	TIMING				
2	MACRO ECONOMIC INDICES				
3	CONSTRUCTION PHASE	3,1	[TURNKEY] EPC		
		3,2	PRE-OPERATING EXPENSES		
		3,3	WORKING CAPITAL		
		3,4	OTHER FINANCING EXPENSES		
4	OPERATIONAL PHASE	4,1	REVENUES	4.1.1	CAPACITY DATA
				4.1.2	CAPACITY USAGE
				4.1.3	TARIFFS
		4,2	EXPENSES	4.2.1	VARIABLE EXPENSES
				4.2.2	FIXED EXPENSES
		4,3	TAX & DUTIES; RESERVES		
		4,4	DEPRECIATION AND INVESTMENTS		
5	FUNDING OF PROJECT	5,1	SPONSOR(S) EQUITY		
		5,2	DEBT / SUBORDINATED DEBT / REDEEMBLE SHARES / MEZZANINE	5.2.1	SHORT TERM DEBT / BRIDGE LOAN
				5.2.2	SUBORDINATED OR UNSECURED DEBT / REDEEMABLE SHARES
		5,3	SENIOR / TERM DEBT	5.3.1	SENIOR DEBT PROFILES
		5,4	REQUIRED RATIOS SENIOR DEBT / DRAW DOWN SCHEDULES		
		5,5	DRAWDOWN PROFILE		
		5,6	MANUALLY SCULPTED DEBT REPAYMENT PROFILES		

- (Project) assumptions will feed / produce financial statements and analyses sheets. In principle, all assumptions are filled-out at one sheet: “A”, from ‘A’ssumption-sheet. The Model does allow for quick input (SUM-sheet) and actual spending during construction (‘C-A’-sheet)*.
- For ease of use of BIOPLAT stakeholders a separate input sheet is fronting the A-Sheet. Hence, the A-sheet has been filled with default parameters and the front-sheet allows to input the main variables.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

ROLE SHADOW-MODEL

BIOPLAT		1	2	3	4	5	6	7	8	9	10	11	12
THE INPUT IN THIS SHEET IS LINKED TO THE A(ssumptions)-SHEET		1	6	7				5	4			2	3
THIS SHEET IS FOR HIFGH-LEVEL INPUT; THE A-SHEET HAS INPUT ENTRIES IN MORE DETAIL	COUNTRY	GERMANY	GERMANY	HUNGARY	HUNGARY	ITALY	ITALY	ROMANIA	ROMANIA	SPAIN	SPAIN	UKRAINE	UKRAINE
	CASE STUDY	SPREE-NEISSE	DAHME-SPREEWALD	BACS-KISKUN & CSONGRAD COUNTRY		SULCIS - SARDINIA	MATERA, BASILICATA REGION	BACAU	GORJ COUNTY	CASE STUDY 1	CASE STUDY 2	CASE STUDY 1	CASE STUDY 2
		BIOMETHANE	CHP	ETHANOL	BIODIESEL-FAME	BIOGAS	BIODIESEL	CHP	CHP	BIODIESEL		CHP	ETHANOL
START CONSTRUCTION (NOTICE TO PROCEED = FINANCIAL CLOSE (FC) + [...] m)	DATE	1-jan-21	1-jan-21	1-jan-21	1-jan-21	1-jan-21	1-jan-21	1-jan-21	1-jan-21	1-jan-21	1-jan-21	1-jan-21	1-jan-21
# OF MONTHS CONSTRUCTION	MONTHS	24	12	24	24	24	24	12	12	24	24	18	24
MODEL FORECAST PERIOD	YEARS	10,00	20,00	25,00	20,00	25,00	25,00	20,00	20,00	25,00	25,00	25,00	25,00
1 EUR / LOCAL CURRENCY		1,00	1,00	1,00	1,00	1,00	1,00	4,92	4,92	1,00	1,00	32,19	32,19
INVESTMENT													
INVESTMENT COST	EUR	1.816.000	4.875.000	41.666.667	35.000.000	64.125.000	2.166.650	4.875.000	975.000	2.166.650		250.000.000	125.000.000
OTHER COST	EUR												
PRODUCTION													
GENERATION CAPACITY	MW	2,28	1,07	3,63		17,10		1,07	0,124			44,00	10,88
CAPACITY / LOAD FACTOR	%	80,00%	85,56%	91,26%		91,26%		85,56%	85,56%			64,82%	91,26%
OTHER PRODUCTION (e.g. FAME, BIOGAS, BIOMETHANE, ETHANOL, etc.)	TN or M^3/yr	1.457.000		11.133	150.000		5.000			5.000			33.400
% FIRST YEAR PRODUCTION	%	100%		100%	80%		100%			100%			100%
HEAT PRODUCTION	MWh/yr		27.500,00					27.500,00	5.500,00			200.000,00	
					1								
PRICES END-PRODUCT													
PRICE ELECTRICITY FROM CHP IN [ ]	EUR/MWh	110,40	98,90	97,00		98,90		164,00	164,00			123,90	123,90
ETHANOL	EUR/TN/M^3			911,77									
PRICE HEAT FROM CHP IN [ ]	EUR/MWh		55,00					75,00	75,00			41,38	
BIOGAS	EUR/TN/M^3												
STRAIGHT VEGETABLE OIL	EUR/TN/M^3												
BIODIESEL	EUR/TN/M^3				1.300,12		1.300,12			1300,12			
BIOGAS	EUR/TN/M^3												
CELLULOSIC ETHANOL	EUR/TN/M^3												911,77
BIOMETHANE	EUR/TN/M^3												
HYDROTREATED VEGETABLE OIL	EUR/TN/M^3												
BIOMASS-TO-LIQUID FUEL	EUR/TN/M^3												
OTHER	EUR/TN/M^3												

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

ROLE SHADOW-MODEL

VARIABLE EXPENSES															
VARIABLE O&M	EUR/kWh														
VARIABLE O&M	EUR/MWh		18					18	18				75		
CONSUMABLES	EUR	290.000		3.596.667	600.000										10.790.000
COST ALL-IN RAW MATERIAL (FROM **STEN**)	EUR/TN	23	80	720	600	23	23	80	80	23					720
QUANTITY RAW MATERIAL (FROM **STEN**)	TN	23.000	9.638	10.000	794.492	78.000	166.320	9.638	1.928	195.000	0		30.000		30.000
ASH DISPOSAL & TRANSPORT COST	EUR/TN		30					30	30						
LAND LEASE - RENT	EUR				28.395										
SELLING, GENERAL & ADMIN EXPENSES	%	1,00%				20,00%	20,00%			20,00%					
FIXED EXPENSES															
ADMINISTRATION / HOLDCO CHARGE	EUR	1.750	65.000		125.000			65.000	13.000				2.500.000		
OPERATIONS & MAINTENANCE FEE	EUR	80.000			324.000										
INSURANCE / BANK FEES / LICENSE FEE	EUR	20.000	5.000		460.000			5.000	1.000						
PERSONNEL EXPENSES	EUR	35.000		864.000	1.355.030								2.500.000		2.592.000
CORPORATE INCOME TAX IN % YEARS 1 to N	%	15,00%	15,00%	9,00%	9,00%	24,00%	24,00%	16,00%	16,00%	25,00%	25,00%		18,00%		18,00%
DEBT SERVICE RESERVE(S)	MONTHS	3	3	3	3	3	3	3	3	3	3		3		3
DEPRECIATION IN YEARS	YEARS	10	20	20	20	20	20	20	20	20	20		20		20
METHOD (1=SLN, 2=DB, 3=DDB, 4=VDB, 5=SYD, 6=MACRS, 7=WDV)		1	1	1	1	1	1	1	1	1	1		1		1
EQUITY															
TARGET EQUITY % OF TOTAL CAPITAL (INCLUDING SUB DEBT)	%	30,00%	40,00%	100,00%	75,00%	40,00%	40,00%	40,00%	40,00%	40,00%	40,00%		75,00%		100,00%
TARGET REAL EQUITY % OF EQUITY [REMAINDER IS SUB DEBT OR SHAREHOLDER LOAN]	%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%	100,00%		100,00%		100,00%
GRANT				60,00%											60,00%
DEBT															
BASE FIXED FUNDING RATE INCL. SWAP RATE IN %	%	7,00%	7,00%	8,00%	8,00%	7,00%	7,00%	7,00%	7,00%	7,00%	7,00%		7,00%		7,00%
MARGIN CONSTRUCTION PERIOD IN %	%														
MARGIN OPERATIONAL PERIOD IN %	%														
TENOR IN YEARS (INCLUDING GRACE PERIOD)	YEARS	10	10	12	12	12	12	8	8	12	12		15		12
GRACE PERIOD IN YEARS (CONVENTION: 1 YR GRACE IS 1st REPAYMENT 1.(2)5 FROM NTP)	YEARS	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0	2,0		2,0		2,0

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part II

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

MULTIPLE PROJECT REPRESENTATION

- The Shadow-Model is set-up to cater for 50 projects directly (and with back-up function to cater for 100's of projects) in one excel-model. Most developers do not develop only one project, most banks do not finance only one project, hence, better to have all projects in one model:

INPUT ASSUMPTIONS

[MODEL IS GROSS ON GRANT, IF ANY = FULL CAPITALISATION ON BALANCE SHEET]

UPDATE MODEL

UPDATE WITH SCULPTING

UPDATE SENSITIVITIES

INPUT : '(C)_A' TABS & COLOR ONLY	THIS COLOR : IF CELLS ARE FILLED OUT	CELLS FOR CURRENCY CHOICE	THIS COLOR: QUALITATIVE BANKABILITY INPUT	G											
BACK TO TOP: T															
GO TO RELATED CEL: >				1	2	7	8	13	14	19	20	25	26	31	32
	PROJECT BUTTON			SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT
BS CHECK	0,0														
ACTIVE PROJECT #	1			DE	DE	ES	ES	HU	HU	IT	IT	RD	RD	UA	UA
COMPANY:	NAME MAIN INVESTOR			NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR
PROJECTNAME:	SPREE-NEISSE			SPREE-NEISSE	DAHME-SPREEWALD	CASE STUDY 1		BACS-KISKUN & CSONGRAD COUNTRY	KOMáROM	SULCIS - SARDINIA		BACAU	GORJ COUNTY	CASE STUDY 1	CASE STUDY 2
PROJECT NUMBER FOR RUNNING SENSITIVITIES:	1	DE		Welzow, Brandenburg				46.83343825714359, 18.916036274870972	47.72867324614832, 18.19787340005915				23.277 E, 44842 N	6825086400:03:0 07:0058	
TOTAL PROJECT COST	EUR	**1.984.959,11**													
TOTAL PROJECT COST AS PER CLIENT MODEL (DIFFERENCE)	(168.959,11)	**1.816.000,00**		1.816.000,00	4.875.000,00	2.166.650,00		41.666.666,67	35.000.000,00	64.125.000	2.166.650	4.875.000,00	975.000,00	250.000.000,00	125.000.000,00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2		2	2	2	2	2	2	2	2	2	2	2	2
INCLUDE **CONTINGENCIES** FOR FULL FUNDING VERSION? (YES=1; NO=0)		1		1	1	1	1	1	1	1	1	1	1	1	1
PROJECT FOR **CONSOLIDATION** (YES=1; NO=0)		0													
OUTPUT CURRENCY OF PROJECT ACTIVE		EUR													

- Each of the 50 columns represents a project. All input for such project is in 1 column. A project is chosen by simply hitting the "select project" – button. The input / assumptions and model choices in relation to the project that is chosen will be put in the 'c'- column of the 'A'ssumption-sheet and from there feed into the model.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

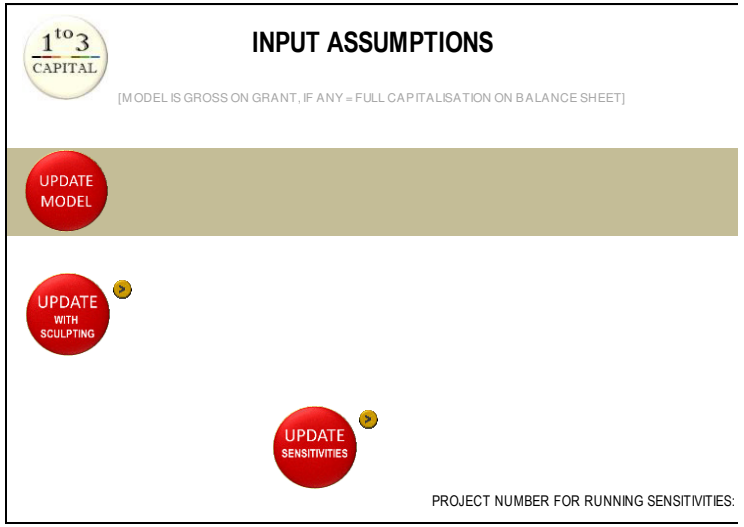
PROJECT SELECTION

```
Sub UPDATE()
'
' UPDATE Macro
'

'
    Range("B9").Select
    ActiveWindow.LargeScroll Down:=4
    Application.Run "Model_Master.xlsm!Contingency_Sum_Clear"
    Application.Run "Model_Master.xlsm!ClearReserves"
    Application.Run "Model_Master.xlsm!FinExpenses"
    Application.Run "Model_Master.xlsm!IDC"
    Application.Run "Model_Master.xlsm!MRF"
    Application.Run "Model_Master.xlsm!Macro3DSRF"
    Application.Run "Model_Master.xlsm!DSRA_SD_construction"
    Application.Run "Model_Master.xlsm!FinExpenses"
    Application.Run "Model_Master.xlsm!IDC"
    Application.Run "Model_Master.xlsm!ECA"
    Application.Run "Model_Master.xlsm!IDC"
    Application.Run "Model_Master.xlsm!Macro3DSRF"
    Application.Run "Model_Master.xlsm!DSRA_SD_construction"
    Application.Run "Model_Master.xlsm!OverallContingency"
    Application.Run "Model_Master.xlsm!FinExpenses"
    Application.Run "Model_Master.xlsm!IDC"
    Application.Run "Model_Master.xlsm!Module16.IDC_Paid_Out"
    Application.Run "Model_Master.xlsm!Commitment_fees"
    Application.Run "Model_Master.xlsm!Module33.Contingency_Sum"
    Application.Run "Model_Master.xlsm!Commitment_fees"
    Application.Run "Model_Master.xlsm!Interest_Capitalised"
    Application.Run "Model_Master.xlsm!Macro3DSRF"
    Application.Run "Model_Master.xlsm!ProjectCost"

    Range("C5").Select
    Sheets("A").Select
```

- The update-macros are copy-paste macros that prevent circular references. The results of each macro can be seen at the 'M'acro – sheet.
- It is recommended to 'update' the Model regularly by hitting the relevant 'update'-buttons on top of the A-sheet:



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

CODES – COLOURING & NAVIGATION TOOLS

- Some of the Codes and Navigation Tools in the Model:

ENERGY CHARGE	IN USE	1	ACTIVE SCENARIO
CURRENCY OF PPA (1=LCY; 2=EUR; 3=USD)	USD	3	3
PRICE PER MWh IN PPA-CURRENCY	USD	0.00	
IF PPA IN LCY; % CONVERSION RISK WITH PROJECT COMPANY		0.00%	
PRICE IN MWh AS PER RES LAW OR PPA IN (TODAY'S EQUIVALENT OF)	USD	160.00	160.00
	USD	160.00	160.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		3	3
GROSS-UP ON PRICE IN % OF PRICE (FOR TRANSMISSION FOR EXAMPLE)		0.0%	
GROSS-UP ON PRICE IN AMOUNT PER MWh (FOR TRANSMISSION FOR EXAMPLE)	USD	0.00	
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0	
INDEXATION			
INDEXATION, IF ANY, FROM DATE OF CONTRACT SIGNING (1), COD (2) OR SPECIFIC DATE (3)		0	
SPECIFIC DATE START INDEXATION			
AT SPECIFIC DATE: # MONTHS 1st INDEXATION YEAR		0.0%	0.00%
YEAR START INDEXATION AT SPECIFIC DATE		0	0
YEAR START INDEXATION		0	0
# OF MONTHS 1st YEAR FOR INDEXATION		0.0%	0.00%
PRICE INCREASED WITH: (1) LOCAL CPI, (2) EUROZONE CPI, (3) US CPI, (4) PPA-INDEXATION %		4	4
(4) PPA-INDEXATION % PER ANNUM IF NOT CPI		0.00%	
(4) PPA-INDEXATION AMOUNT PER ANNUM IF NOT CPI		0.00	
CAP PPA PRICE IN CASE OF INDEXATION	USD	0.00	
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0	
INDEXATION 1st YR: (1) (PROPORTIONAL) FULL YEAR, (2) (PROPORTIONALLY) AVERAGED, (3) NOT 1st YR		2	2
INDENDURE FLOOR: MINIMUM INCREASE IN INDEXATION TO HAVE INDEXATION KICK-IN		0.00%	
AVAILABILITY GUARANTEE LEVEL		0.00%	
ACCOUNTS RECEIVABLE (IN DAYS)		0	
AVERAGE CHARGE PER MWh [PER UNIT] PER ANNUM		USD	
2020	1	160.00	160.00
2021	2	160.00	160.00
2022	3	160.00	160.00
2023	4	160.00	160.00
2024	5	160.00	160.00

Buttons return user to top of input sheet

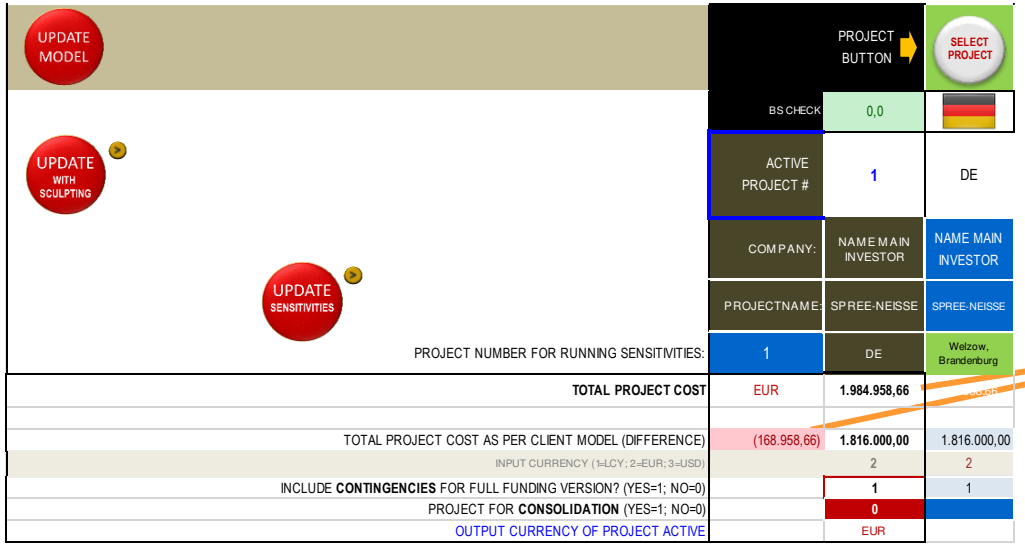
Shows in the input sheet which of the 50 projects has been made active (and is showing in the 'c'-column).

Shows the value that will be used in the Model.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

INDEPENDENCE

- The BIOPLAT Model calculates certain construction expenses / budget items itself like Interest During Construction (IDC), Commitment Fees, Debt Service Reserve Fund (DSRF), etc.



Any difference in total project cost between Developer's and the BIOPLAT Model may give rise to asking questions.

- The difference, if any, is based upon a standard way of calculating IDC, DSRF, etc. by the Shadow Model whereas sponsor models not necessarily all use the same approach. In the Shadow Model the excel-sheet 'M'(acro) shows the calculation of independent values.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

HIGH-LEVEL FEASIBILITY VS ACTUAL MONITORING INPUT

- The Shadow-Model is set-up to cater for (1) quick-scan and high-level early stages input (feasibility and bidding purposes), (2) detailed assumptions per parameter (to reach the stage of Financial Close, mirroring a developers' model 100%), but (3) as well for actual construction period expenses mirroring an actual project in full for monitoring purposes.

High-level Feasibility Input example (per metric):

INPUT : '(C)_A' TABS & COLOR ONLY AND THIS TAB				
INCOME DATA PER ANNUM / PER METRIC				
PER ANNUM / PER METRIC				
ENERGY CHARGE 1 CONTRACTED (TODAY'S VALUE)	USD		180.00	MWh
% CONTRACTED				
ENERGY CHARGE 2 CONTRACTED (TODAY'S VALUE)	USD		0.00	MWh
ENERGY CHARGE SPOT MARKET (TODAY'S VALUE)	USD		0.00	MWh
% NON-CONTRACTED		0.00%		
MINIGRID PRE-PAID	MWh		0.00	MWh
MINIGRID POST-PAID - METERED	USD		0.00	kWh
DUoS	USD		0.00	MWh
CAPACITY MARKET CHARGE	USD MILLION		0.00	MW
EMBEDDED BENEFITS	USD MILLION		0.00	MW
PRICE OF HEAT	USD		0.00	MW / T
PRICE FERTILIZER (SOLID)	USD		0.00	T
PRICE FERTILIZER (LIQUID)	USD		0.00	T
CARBON CREDIT PRICE	USD		0.00	UNIT
GATE FEE CONTRACTED	USD		0.00	/ T
% CONTRACTED				
GATE FEE SPOT MARKET	USD		0.00	/ T
% NON-CONTRACTED		0.00%		

EXPENSE DATA PER ANNUM / PER METRIC				
PER ANNUM / PER METRIC				
VARIABLE O&M				
VARIABLE O&M COST PER kWp	USD		0.80	kWp
VARIABLE O&M COST PER MWh	USD		0.00	MWh
CONSUMABLES				
AMOUNT T0	USD MILLION		0.00	MIO
NUMBER OF LABORATORY TESTS PER ANNUM	#		0.00	
PRICE PER TEST	USD MILLION		0.00	MIO
ASH DISPOSAL & TRANSPORT COST				
BOTTOM ASH DISPOSAL	TONNES		0.00	p.a.
PRICE PER TONNE	USD		0.00	/ T
FLY ASH DISPOSAL	TONNES		0.00	p.a.
PRICE PER TONNE	USD		0.00	/ T
LAND LEASE - RENT				
ANNUAL CHARGE AT T0	USD MILLION		0.06	MIO
ADMINISTRATION / HOLDCO CHARGE				
ADMINISTRATION COST PER ANNUM AT T0	USD MILLION		0.09	MIO
OPERATIONS & MAINTENANCE FEE				
MAINTENANCE FEE AT T0	USD MILLION		0.19	MIO
O&M FEE AT T0	USD MILLION		0.00	MIO
INSURANCE / BANK FEES				
INSURANCE COST AT T0	USD MILLION		0.02	MIO
PERSONNEL EXPENSES				
[UNIT] EXPENSES AT T0	USD MILLION		0.00	MIO
MIGA COVERAGE			3%	
PARASITIC LOAD AS EXPENSE				
ANNUAL PARASITIC LOAD			0.00	MWh
EXPENSE AT % OF PPA-TARIFF			0%	

Input in blue-cells only; column next to it shows if filled out at detailed input field already.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

HIGH-LEVEL FEASIBILITY VS ACTUAL MONITORING INPUT

Detailed Input for Financial Close, example details of one parameter:

ENERGY CHARGE 1	IN USE		ACTIVE SCENARIO
CURRENCY OF PPA (1=LCY; 2=EUR; 3=USD)	USD	3	3
CURRENT PRICE IN MWh IN LCY	BIF (Fbu)	0.00	
IF PPA IN LCY; % CONVERSION RISK WITH PROJECT COMPANY		0.00%	
PRICE IN MWh AS PER RES LAW OR PPA IN (TODAY'S EQUIVALENT OF)	USD	180.00	180.00
	USD	180.00	180.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0	
GROSS-UP ON PRICE IN % OF PRICE (FOR TRANSMISSION FOR EXAMPLE)		0.0%	
GROSS-UP ON PRICE IN AMOUNT PER MWh (FOR TRANSMISSION FOR EXAMPLE)	USD	0.00	
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		1	1
INDEXATION			
INDEXATION, IF ANY, FROM DATE OF CONTRACT SIGNING (1), COD (2) OR SPECIFIC DATE (3)		2	2
SPECIFIC DATE START INDEXATION			
AT SPECIFIC DATE: # MONTHS 1st INDEXATION YEAR		0.0%	0.00%
YEAR START INDEXATION AT SPECIFIC DATE		0	0
YEAR START INDEXATION		2018	2018
# OF MONTHS 1st YEAR FOR INDEXATION		50.0%	50.00%
PRICE INCREASED WITH: (1) LOCAL CPI, (2) EUROZONE CPI, (3) US CPI, (4) PPA-INDEXATION %		4	4
(4) PPA-INDEXATION % PER ANNUM IF NOT CPI		0.00%	
(4) PPA-INDEXATION AMOUNT PER ANNUM IF NOT CPI		0.00	
CAP PPA PRICE IN CASE OF INDEXATION	USD	0.00	
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		3	3
INDEXATION 1st YR: (1) (PROPORTIONAL) FULL YEAR, (2) (PROPORTIONALLY) AVERAGED, (3) NOT 1st YR		3	3
INDENDURE FLOOR: MINIMUM INCREASE IN INDEXATION TO HAVE INDEXATION KICK-IN		0.00%	
AVAILABILITY GUARANTEE LEVEL		0.00%	
ACCOUNTS RECEIVABLE (IN DAYS)		0	
AVERAGE CHARGE PER MWh [PER UNIT] PER ANNUM		USD	
2018	1	180.00	180.00
2019	2	180.00	180.00
2020	3	180.00	180.00
2021	4	180.00	180.00
2022	5	180.00	180.00
2023	6	180.00	180.00
2024	7	180.00	180.00
2025	8	180.00	180.00
2026	9	180.00	180.00
2027	10	180.00	180.00

All input for a project in 1 column

Selected project shows in this column to feed-in rest of model

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

HIGH-LEVEL FEASIBILITY VS ACTUAL MONITORING INPUT

Representation of actual spending example (possible for all 50 projects next to each other):

CONSTRUCTION PERIOD MANUALLY CURRENCY 1					0	0	0	0	0	0	0	0	0	0
USD MILLION					2018	2018	2018	2018	2018	2018	0	0	0	0
TIMING					1	1	1	1	1	1	0	0	0	0
	NTP	NTP_PAST	COD	PER MONTH	1	2	3	4	5	6	7	8	9	10
					01-Jan-18	01-Feb-18	01-Mar-18	01-Apr-18	01-May-18	01-Jun-18	01-Jul-18	01-Aug-18	01-Sep-18	01-Oct-18
1 EUR / LOCAL CURRENCY	1773.01		1858.47	14.243180	1767.95	1801.50	1815.74	1829.98	1844.23	1858.47				
1 EUR / USD	1.12350		1.13698	0.002247	1.12575	1.12789	1.13024	1.13249	1.13474	1.13698				
1 USD / LOCAL CURRENCY	1578.11		1640.61	10.415546	1588.53	1598.94	1609.36	1619.78	1630.19	1640.61				
OVERVIEW OF MANUAL INPUT OF ACTIVE SCENARIO		RED: NO MANUAL INPUT; GREEN: MANUAL INPUT												
[TURNKEY] EPC	MANUAL INPUT (YES=1; NO=0)	FOREX RISK (1=PROJECT; 0=CONTRACT)	REF AMOUNT REPORTING CURRENCY	▲	1	2	3	4	5	6				
SITE AND ACCESS ROADS	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FOUNDATION WORKS	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER CIVIL WORKS	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
GENERATION ASSETS / MACHINERY	1	0	8.28	0.00	1.24	0.00	1.74	2.48	1.66	1.16	0.00	0.00	0.00	0.00
FINAL ENGINEERING & DESIGN	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUBSTATION / GRID AVAILABILITY	1	0	0.30	-	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PV TRACKERS	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INVERTERS	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONNECTION / UPGRADE TRANSMISSION	1	0	0.44	-	0.07	0.00	0.09	0.13	0.09	0.06	0.00	0.00	0.00	0.00
INSURANCE	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COMMISSIONING / OTHER SITE INFRA / BoP	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EPC MANAGEMENT	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONTINGENCY EPC CONTRACT (CONSTRUCTION)	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONTINGENCY EPC CONTRACT (EQUIPMENT)	1	0	0.30	-	0.00	0.00	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00
CONTINGENCY OVERALL PROJECT COST	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PRE-OPERATING EXPENSES														
DEVELOPMENT EXPENSES / FEE	1	0	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEGAL FEE / PERMITING	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
FOREIGN CONSULTANCY	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LAND ACQUISITION / EXPROPRIATION COST	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSURANCE (NON-EPC)	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EARLY WORKS & START-UP COST	1	0	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRANSPORT & IMPORT COSTS	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PROJECT MANAGEMENT (GEN ADM) / PLANNING	1	0	1.13	-	0.56	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
CUSTOM DUTIES & TAXES	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER PRE-OPERATING EXPENSES / EQUITY PREMIUM	1	0	1.13	-	0.56	0.00	0.00	0.00	0.00	0.56	0.00	0.00	0.00	0.00
CONTINGENCY PRE-OPERATING EXPENSES	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONTINGENCY OTHER EQUIPMENT	0	0	-		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

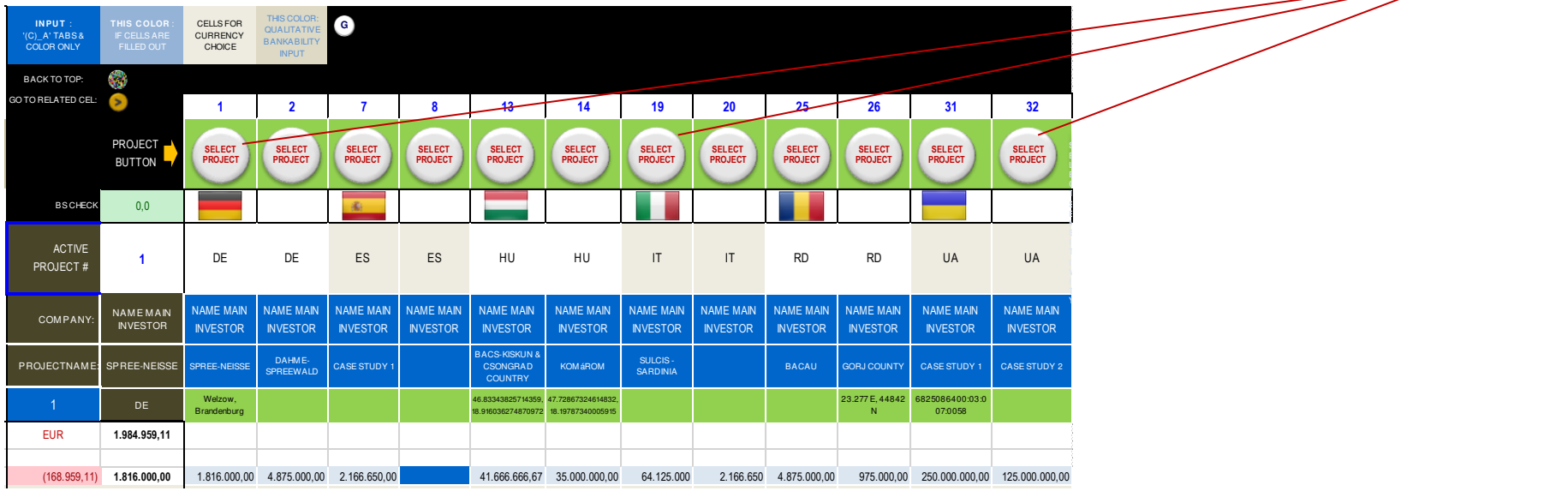
Possibility to take forex movements during construction into account, per line-item

Actual monthly spending during construction; possible in three currency inputs per line-item (for example part of the cost of machinery in EUR, USD and LCY)

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Ease of Use

- Notwithstanding the many possible input-fields, the general 'moving pieces' are restricted to a handful of input parameters: 1) exchange rates, 2) construction timing, 3) construction cost plus depreciation, 4) tariffs, 5) opex, and 6) finance structure and terms and conditions. Switch between projects thereafter is simply pushing a button:



INPUT : '(C)_A' TABS & COLOR ONLY	THIS COLOR : IF CELLS ARE FILLED OUT	CELLS FOR CURRENCY CHOICE	THIS COLOR: QUALITATIVE BANKABILITY INPUT	G											
BACK TO TOP:															
GO TO RELATED CEL:	>														
	PROJECT BUTTON	1	2	7	8	13	14	19	20	25	26	31	32		
		SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT	SELECT PROJECT		
BS CHECK	0,0														
ACTIVE PROJECT #	1	DE	DE	ES	ES	HU	HU	IT	IT	RD	RD	UA	UA		
COMPANY:	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR	NAME MAIN INVESTOR		
PROJECTNAME	SPREE-NEISSE	SPREE-NEISSE	DAHME-SPREEWALD	CASE STUDY 1		BACS-KISKUN & CSONGRAD COUNTRY	KOMáROM	SULCIS - SARDINIA		BACAU	GORJ COUNTY	CASE STUDY 1	CASE STUDY 2		
1	DE	Welzow, Brandenburg				46.83343825714359, 18.916036274870972	47.72867324614832, 18.19787340005915				23.277 E, 44842 N	6825086400:03:007:0058			
EUR	1.984.959,11														
(168.959,11)	1.816.000,00	1.816.000,00	4.875.000,00	2.166.650,00		41.666.666,67	35.000.000,00	64.125.000	2.166.650	4.875.000,00	975.000,00	250.000.000,00	125.000.000,00		

- The model then takes care of calculating interest during construction, contingencies, reserves, etc. of which most have been filled out at default values following international practice (for example ½ year debt service reserve account). One never has to bother about proper calculation of debt service coverage ratio's, equity returns, etc.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

CODES - COLOURING

- The Model is set-up to report in any of three currencies (local currency, EUR or USD; or tailor-made any selection of three currencies). Input assumptions can be for any of these currencies per line-item or can be overruled for one-currency input for the whole model per project. The only input needed to have the multiple currency option function is the current EUR:LCY exchange rate and the EUR:USD exchange rate. If forward-looking inflation rates are used the model then can use power purchasing parity (optional) for forward-looking statements (if not used the Model shows 'real' values instead of 'nominal'). The Romania and the Ukraine-currencies are included for reporting in local currency.

MACRO ECONOMIC INDICES												ACTIVE SCENARIO	
EXCHANGE RATES TODAY													
LOCAL CURRENCY SYMBOL	LCY	UAH	EUR	EUR	EUR	EUR	EUR	EUR	EUR	EUR	RON	RON	UAH	UAH
1 EUR / LOCAL CURRENCY		32,19	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	4,922	4,922	32,189	32,189
1 LOCAL CURRENCY / EUR		0,03107	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	0,203	0,203	0,031	0,031
1 EUR / USD		1,1845	1,1845	1,185	1,185	1,185	1,185	1,185	1,185	1,185	1,185	1,185	1,185	1,185
1 LOCAL CURRENCY / USD		0,03680	1,185	1,185	1,185	1,185	1,185	1,185	1,185	1,185	0,241	0,241	0,037	0,037
1 USD / LOCAL CURRENCY		27,17	0,844	0,844	0,844	0,844	0,844	0,844	0,844	0,844	4,155	4,155	27,175	27,175
USE OF **EXCHANGE RATES PAST** (IF MODEL USED FOR ACTUAL MONITORING OR RESTRUCTURING) (Y=1;N=0)	NTP_PAST	0	0	0	0	0	0	0	0	0	0	0	0	0
1 EUR / LOCAL CURRENCY		32,19	1,00	1,000	1,000	1,000	1,000	1,000	1,000	1,000	4,922	4,922	32,189	32,19
1 EUR / USD		1,1845	1,18451	1,1845	1,1845	1,1845	1,1845	1,1845	1,1845	1,1845	1,1845	1,1845	1,1845	1,1845
1 USD / LOCAL CURRENCY		27,17	0,84	0,84	0,84	0,84	0,84	0,84	0,84	0,84	4,16	4,16	27,17	27,17
FIXED EXCHANGE RATE LOCAL CURRENCY VIS-À-VIS **EUR**? (YES=1, NO=0)		0												
FIXED EXCHANGE RATE LOCAL CURRENCY VIS-À-VIS **USD**? (YES=1, NO=0)		0												
MINIMIZATION LCY FOR REPORTING PURPOSES? (1=/000's TO BILLIONS, 2=/000,000 TO TRILLIONS)	1,000	0												
REPORTING NOT IN MIO (1=000's, 2=000,000)		2	2	2	2	2	2	2	2	2	2	2	2	2
INPUT CURRENCY IF ALL INPUT IS IN 1 CURRENCY (1=LCY, 2=EUR, 3=USD, OTHERWISE '0')		0												
OUTPUT CURRENCY (1=EUR, 2=USD, 3=LCY)	EUR	1	1	1	1	1	1	1	1	1	1	1	1	1
ALLOW MODEL TO USE POWER PURCHASING PARITY? (INFLATION ADJUSTMENT) (YES=1; NO=0)		1	1	1	1	1	1	1	1	1	1	1	1	1

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part II

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Model Set-Up - Timing

- The Model input starts with setting the timing elements of a project:

TIMING		
DATES		
	TODAY	2021-06-25
TIMING PROJECT(S)		
SIGNING LOAN DOCUMENTATION (START TENOR (FIRST) LOAN = CP's MET - DRAWDOWN POSSIBLE)	FC	2021-01-01
START CONSTRUCTION (NOTICE TO PROCEED = FINANCIAL CLOSE (FC) + [...] m)	NTP	2021-01-01
# OF MONTHS CONSTRUCTION		18
TARGET PHYSICAL COMPLETION PROJECT	TCD	2022-07-01
PRE-COMPLETION (IN CASE OF PHASED APPROACH)		
MONTHS BETWEEN TARGET AND ACTUAL PHYSICAL COMPLETION		0
ACTUAL COMPLETION DATE	ACD	2022-07-01
# OF MONTHS ACCEPTANCE TESTS		0
PROJECT ACCEPTANCE DATE (PHYSICAL COMPLETION DATE)	PCD	2022-07-01
MONTHS BETWEEN PROJECT ACCEPTANCE AND COD		0
COMMERCIAL OPERATION DATE (RELEASE PROJECT COMPLETION GUARANTEE, IF ANY)	COD	2022-07-01
TOTAL NUMBER OF MONTHS CONSTRUCTION PERIOD		18
LONG STOP DATE EPC-CONTRACT	LSD	
# OF QUARTERLY PERIODS BETWEEN COD AND FCD		0
FINANCIAL COMPLETION DATE (RELEASE SCHEDULED DEBT 'COMPLETION' GUARANTEE, IF ANY)	FCD	2022-07-01
MODEL FORECAST PERIOD (FOR REFERENCE: TENOR PPA)	YR	25
START FINANCIAL (OPERATIONAL) REPORTING YEAR		1-jan

- Timing elements are often found in the main Project's contract such as power purchase agreement ('PPA'), the engineering, procurement and construction contract ('EPC') and the operations and maintenance contract ('O&M').

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Model Set-Up - Timing

- Timing elements determine to a large extent the proper working of the Model:
  - The construction period is represented monthly and construction spending is allocated over the years covering the construction period.
  - Forward looking statements pick-up from the moment COD is reached at the end of the construction period, in this version of the model in years.
  - Most, if not all, calculations that feed into the financial statements are time-dependent calculations i.e. depreciation, taxation, reserves, etc.
  - All finance possibilities are also fully time-dependent.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Model Set-Up - Timing

- Timing also determines the allocation of investment costs during construction (up to 6 years / month):

NAME MAIN INVESTOR									
CONSTRUCTION PERIOD		0	0	0	0	0	0	0	0
		2021	2021	2021	2021	2021	2021	2021	2021
TIMING CONSTRUCTION PERIOD		1	1	1	1	1	1	1	1
		1	2	3	4	5	6	7	8
	NTP:	1-jan	1-feb	1-mrt	1-apr	1-mei	1-jun	1-jul	1-aug
[TURNKEY] EPC									
EUR	TOTAL								
INVESTMENT AMOUNT BIOPLAT CASE STUDY	250.000.000,0	13.888.888,9	13.888.888,89	13.888.888,89	13.888.888,89	13.888.888,89	13.888.888,89	13.888.888,89	13.888.888,89
FOUNDATION WORKS	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
OTHER CIVIL WORKS	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
OTHER	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
OTHER	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
OTHER	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
DISTRIBUTION NETWORK	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
OTHER	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
CONNECTION / UPGRADE TRANSMISSION	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
OTHER	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
OTHER	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
COMMISSIONING / OTHER SITE INFRA / BoP	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
EPC MANAGEMENT [INSURANCE]	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
CONTINGENCY EPC CONTRACT (CONSTRUCTION)	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
CONTINGENCY EPC CONTRACT (EQUIPMENT)	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
CONTINGENCY OVERALL PROJECT COST	-	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00
TOTAL [TURNKEY] EPC	**250.000.000,0**	**13.888.888,9**	**13.888.888,9**	**13.888.888,9**	**13.888.888,9**	**13.888.888,9**	**13.888.888,9**	**13.888.888,9**	**13.888.888,9**
TOTAL [TURNKEY] EPC ACCUMULATED		**13.888.888,9**	**27.777.777,8**	**41.666.666,7**	**55.555.555,6**	**69.444.444,4**	**83.333.333,3**	**97.222.222,2**	**111.111.111,1**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Model Set-Up – Macro-Economic Indices

- The Model allows for input and reporting in three currencies.

MACRO ECONOMIC INDICES		
EXCHANGE RATES TODAY		
LOCAL CURRENCY SYMBOL	LCY	UAH
1 EUR / LOCAL CURRENCY		32,19
1 LOCAL CURRENCY / EUR		0,03107
1 EUR / USD		1,1845
1 LOCAL CURRENCY / USD		0,03680
1 USD / LOCAL CURRENCY		27,17
USE OF **EXCHANGE RATES PAST** (IF MODEL USED FOR ACTUAL MONITORING OR RESTRUCTURING) (Y=1;N=0)	NTP_PAST	0
1 EUR / LOCAL CURRENCY		32,19
1 EUR / USD		1,1845
1 USD / LOCAL CURRENCY		27,17
FIXED EXCHANGE RATE LOCAL CURRENCY VIS-À-VIS **EUR**? (YES=1, NO=0)		0
FIXED EXCHANGE RATE LOCAL CURRENCY VIS-À-VIS **USD**? (YES=1, NO=0)		0
MINIMIZATION LCY FOR REPORTING PURPOSES? (1=/000's TO BILLIONS, 2=/000,000 TO TRILLIONS)	1,000	0
REPORTING NOT IN MIO (1=000's, 2=000,000)		2
INPUT CURRENCY IF ALL INPUT IS IN 1 CURRENCY (1=LCY, 2=EUR, 3=USD, OTHERWISE '0')		0
OUTPUT CURRENCY (1=EUR, 2=USD, 3=LCY)	EUR	1
ALLOW MODEL TO USE POWER PURCHASING PARITY? (INFLATION ADJUSTMENT) (YES=1; NO=0)		1

- The Model uses Purchasing Power Parity as underlying theory for forward looking cross-exchange rates and inflation indices.
- The minimum input needed to make the model function is the exchange rate between the EUR and UAH and RON and a forecasted inflation rate for Ukraine and Romania. The inflation rate can be one figure applicable throughout the forecast period or can be a future rate varying every year.
- Exchange rates and inflation are to be taken from the internet; there are no external links in the Model.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Model Set-Up – Macro-Economic Indices

- The Model allows for input and reporting in three currencies.

MACRO ECONOMIC INDICES		
EXCHANGE RATES TODAY		
LOCAL CURRENCY SYMBOL	LCY	UAH
1 EUR / LOCAL CURRENCY		32,19
1 LOCAL CURRENCY / EUR		0,03107
1 EUR / USD		1,1845
1 LOCAL CURRENCY / USD		0,03680
1 USD / LOCAL CURRENCY		27,17
USE OF **EXCHANGE RATES PAST** (IF MODEL USED FOR ACTUAL MONITORING OR RESTRUCTURING) (Y=1;N=0)	NTP_PAST	0
1 EUR / LOCAL CURRENCY		32,19
1 EUR / USD		1,1845
1 USD / LOCAL CURRENCY		27,17
FIXED EXCHANGE RATE LOCAL CURRENCY VIS-À-VIS **EUR**? (YES=1, NO=0)		0
FIXED EXCHANGE RATE LOCAL CURRENCY VIS-À-VIS **USD**? (YES=1, NO=0)		0
MINIMIZATION LCY FOR REPORTING PURPOSES? (1=/000's TO BILLIONS, 2=/000,000 TO TRILLIONS)	1,000	0
REPORTING NOT IN MIO (1=000's, 2=000,000)		2
INPUT CURRENCY IF ALL INPUT IS IN 1 CURRENCY (1=LCY, 2=EUR, 3=USD, OTHERWISE '0')		0
OUTPUT CURRENCY (1=EUR, 2=USD, 3=LCY)	EUR	1
ALLOW MODEL TO USE POWER PURCHASING PARITY? (INFLATION ADJUSTMENT) (YES=1; NO=0)		1

- Some countries / regions have a fixed exchange rate against the EUR and USD which can be chosen in the Model here.
- The Model can report in minimized currencies (if the local currency denominations are high, for example billions) or in actual figures, 000's or millions.
- Throughout the Model all input can be in one of the three currencies (EUR, USD, UAH or RON), the reporting currency brings them back to one currency. If one does not want to bother about input-currencies per line-item it can be overruled here for the whole Model for 1 input currency.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Model Set-Up – Macro-Economic Indices

- The Model allows for input and reporting in three currencies.

MACRO ECONOMIC INDICES		
EXCHANGE RATES TODAY		
LOCAL CURRENCY SYMBOL	LCY	UAH
1 EUR / LOCAL CURRENCY		32,19
1 LOCAL CURRENCY / EUR		0,03107
1 EUR / USD		1,1845
1 LOCAL CURRENCY / USD		0,03680
1 USD / LOCAL CURRENCY		27,17
USE OF **EXCHANGE RATES PAST** (IF MODEL USED FOR ACTUAL MONITORING OR RESTRUCTURING) (Y=1;N=0)	NTP_PAST	0
1 EUR / LOCAL CURRENCY		32,19
1 EUR / USD		1,1845
1 USD / LOCAL CURRENCY		27,17
FIXED EXCHANGE RATE LOCAL CURRENCY VIS-À-VIS **EUR**? (YES=1, NO=0)		0
FIXED EXCHANGE RATE LOCAL CURRENCY VIS-À-VIS **USD**? (YES=1, NO=0)		0
MINIMIZATION LCY FOR REPORTING PURPOSES? (1=/000's TO BILLIONS, 2=/000,000 TO TRILLIONS)	1,000	0
REPORTING NOT IN MIO (1=000's, 2=000,000)		2
INPUT CURRENCY IF ALL INPUT IS IN 1 CURRENCY (1=LCY, 2=EUR, 3=USD, OTHERWISE '0')		0
OUTPUT CURRENCY (1=EUR, 2=USD, 3=LCY)	EUR	1
ALLOW MODEL TO USE POWER PURCHASING PARITY? (INFLATION ADJUSTMENT) (YES=1; NO=0)		1

- The Models' input-sheet for actual construction period spending ('C-A') can have exchange rates included from the past; this way the actual spent budget can be modelled.
- The Model's choice not to use inflation correction shows the real values; nominal values are shown otherwise.

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Construction Period Input

- Input for the construction period follows international practice EPC-contract budgets, pre-operating expenses (not part of EPC contract), working capital and other cost. Most projects' budget items fit this set-up.

CONSTRUCTION PHASE		
MANUAL INPUT CONSTRUCTION BUDGET AT "C-A"-SHEET? (YES=1, NO=0)		0
YEAR-DEPENDENT CAPEX PER UNIT? (YES=1, NO=0) (INPUT AT 'A-UNIT')	UNIT	1
NUMBER OF UNIT INVESTMENTS IN SAME CONSTRUCTION PHASE (INPUT: CONSTRUCTION COST / UNIT)	NR OF UNITS	1
[TURNKEY] EPC		EUR MILLION
SITE AND ACCESS ROADS		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
		0.00
FOUNDATION WORKS		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
OTHER CIVIL WORKS		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
GENERATION ASSETS / MACHINERY	COST ALL UNITS	6.09
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
FINAL ENGINEERING & DESIGN		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
SUBSTATION / GRID AVAILABILITY		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
PV TRACKERS		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
INCREMENTAL INVESTMENTS EXISTING ASSETS To		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
	#	0.00
CONNECTION / UPGRADE TRANSMISSION		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
INSURANCE		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
INSTALLATION		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
COMMISSIONING / OTHER SITE INFRA / BoP		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
EPC MANAGEMENT		0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
SUB-TOTAL EPC CONTRACT		6.09
CONTINGENCY EPC CONTRACT (CONSTRUCTION) [YES=1, NO=0]		0
CONTINGENCY INCLUDED IN CONTRACT PRICE [YES=1, NO=0]		0.00
CONTINGENCY AS % OF CONTRACT PRICE		0.00%
CONTINGENCY IN SPECIFIC (CAPPED) AMOUNT	EUR MILLION	0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
CONTINGENCY EPC CONTRACT (CONSTRUCTION)	EUR MILLION	0.00
CONTINGENCY EPC CONTRACT (EQUIPMENT) [YES=1, NO=0]		0
CONTINGENCY INCLUDED IN CONTRACT PRICE [YES=1, NO=0]		0.00
CONTINGENCY AS % OF CONTRACT PRICE		0.00
CONTINGENCY IN SPECIFIC (CAPPED) AMOUNT	EUR MILLION	0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
CONTINGENCY EPC CONTRACT (EQUIPMENT)		0.00
CONTINGENCY OVERALL PROJECT COST [YES=1, NO=0]		0
CONTINGENCY INCLUDED IN CONTRACT PRICE [YES=1, NO=0]		0.00
CONTINGENCY AS % OF TOTAL PROJECT COST		0.00%
CONTINGENCY IN SPECIFIC (CAPPED) AMOUNT	EUR MILLION	0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
CONTINGENCY OVERALL PROJECT COST	EUR MILLION	0.00
SUB-TOTAL (INCLUDING CONTINGENCIES IF NOT INCLUDED IN CONTRACT PRICE)		6.09
MARGIN EPC CONTRACTOR IF ALSO EQUITY PROVIDER IN %		0.0%

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

ALLOCATION OF CONSTRUCTION PERIOD INPUT

- The allocation of construction cost can be:

1. pro-rata monthly during construction period – default in the Model,
2. following a certain pre-defined pattern as per the table:

DISPROPORTIONAL CONSTRUCTION FUNDING	NOT IN USE	
FUNDING DIFFERS PER CALENDAR YEAR (1) OR PER CONSTRUCTION YEAR (2)?		0
INPUT IN AMOUNT - OUTPUT IN %		
YEAR 1		0.00%
YEAR 2		0.00%
YEAR 3		0.00%
YEAR 4		0.00%
YEAR 5		0.00%
INPUT IN % - OUTPUT IN %		
YEAR 1		0.00%
YEAR 2		0.00%
YEAR 3		0.00%
YEAR 4		0.00%
YEAR 5		0.00%

3. manually per month:

CASE STUDY 1	31	THIS SHEET ALLOWS FOR MANUAL INPUT DURING THE CONSTRUCTION PHASE (HENCE, ALSO FOR INPUT FOR ACTUAL SPENDING, FOR MONITORING OR RESTRUCTURING PURPOSES; FOR THIS REASON PAST FOREX RATES CAN BE USED IF INDICATI
CONSTRUCTION PERIOD MANUALLY CURRENCY 1		

					0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	4	5	6	7
EUR					2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2021	2022	2022	2022	2022	2022	2022	0
TIMING					1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0
	NTP	NTP_PAST	COD	PER MONTH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
					01-jan-21	01-feb-21	01-mrt-21	01-apr-21	01-mei-21	01-jun-21	01-jul-21	01-aug-21	01-sep-21	01-okt-21	01-nov-21	01-dec-21	01-jan-22	01-feb-22	01-mrt-22	01-apr-22	01-mei-22	01-jun-22	01-jul-22
1 EUR / LOCAL CURRENCY	32,19		34,31	0,117668	32,31	32,42	32,54	32,66	32,78	32,89	33,01	33,13	33,25	33,37	33,48	33,60	33,72	33,84	33,95	34,07	34,19	34,31	
1 EUR / USD	1,18451		1,00000	-0,010251	1,17426	1,16401	1,15376	1,14351	1,13326	1,12301	1,11276	1,10251	1,09226	1,08200	1,07175	1,06150	1,05125	1,04100	1,03075	1,02050	1,01025	1,00000	
1 USD / LOCAL CURRENCY	27,17		0,00	-1,509710	25,67	24,16	22,65	21,14	19,63	18,12	16,61	15,10	13,59	12,08	10,57	9,06	7,55	6,04	4,53	3,02	1,51	0,00	
OVERVIEW OF MANUAL INPUT OF ACTIVE SCENARIO		RED: NO MANUAL INPUT; GREEN: MANUAL INPUT																					
MANUAL INPUT CONSTRUCTION PHASE AT PROJECT LEVEL	CURRENCY 1																						
SCENARIO 1	DE		SPREE-NEISSE		01-jan-21	01-feb-21	01-mrt-21	01-apr-21	01-mei-21	01-jun-21	01-jul-21	01-aug-21	01-sep-21	01-okt-21	01-nov-21	01-dec-21	01-jan-22	01-feb-22	01-mrt-22	01-apr-22	01-mei-22	01-jun-22	01-jul-22	
SCENARIO 2	DE		DAHME-SPREEWALD		01-jan-21	01-feb-21	01-mrt-21	01-apr-21	01-mei-21	01-jun-21	01-jul-21	01-aug-21	01-sep-21	01-okt-21	01-nov-21	01-dec-21	01-jan-22	01-feb-22	01-mrt-22	01-apr-22	01-mei-22	01-jun-22	01-jul-22	
[TURNKEY] EPC	MANUAL INPUT (YES=1; NO=0)	0	REF. AMOUNT	EUR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
INVESTMENT AMOUNT BIOPLAT CASE STUDY			250.000.000,00																				
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)																							
FOUNDATION WORKS			-																				
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)																							
OTHER CIVIL WORKS			-																				

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

CONSTRUCTION PERIOD LINKS

- Every line-item of cost per construction period is linked to a separate depreciation menu:

NAME MAIN INVESTOR		
CONSTRUCTION PERIOD		0
		2021
TIMING CONSTRUCTION PERIOD		1
		1
	NTP:	1-jan
[TURNKEY] EPC		
EUR	TOTAL	
INVESTMENT AMOUNT BIOPLAT CASE STUDY	250.000.000,0	13.888.888,9
FOUNDATION WORKS	-	0,0
OTHER CIVIL WORKS	-	0,0
OTHER	-	0,0
OTHER	-	0,0
OTHER	-	0,0
DISTRIBUTION NETWORK	-	0,0
OTHER	-	0,0
CONNECTION / UPGRADE TRANSMISSION	-	0,0
OTHER	-	0,0
OTHER	-	0,0
COMMISSIONING / OTHER SITE INFRA / BoP	-	0,0
EPC MANAGEMENT [INSURANCE]	-	0,0
CONTINGENCY EPC CONTRACT (CONSTRUCTION)	-	0,0
CONTINGENCY EPC CONTRACT (EQUIPMENT)	-	0,0
CONTINGENCY OVERALL PROJECT COST	-	0,0
TOTAL [TURNKEY] EPC	**250.000.000,0**	**13.888.888,9**
TOTAL [TURNKEY] EPC ACCUMULATED		**13.888.888,9**

GENERAL ASSUMPTIONS DEPRECIATION		
SHOW FISCAL DEPRECIATION IN MODEL I.O. ACCOUNTING DEPRECIATION? (1=YES; 0=NO)		0
FISCAL DEPRECIATION START AS FROM COD (1) OR END TAX HOLIDAY PERIOD (2)		1
START YEAR FISCAL DEPRECIATION		2022
PERCENTAGE UPLIFT ALLOWED FOR FISCAL DEPRECIATION, IF ANY		0%
DEPRECIATION PERIOD (ALL ASSETS) CAPPED BY TERM CONTRACT / MODEL PERIOD? (1=NO; 0=YES)		1
DEPRECIATION METHODS ACCOUNTING:		
STRAIGHT LINE DEPRECIATION (SLN) - MAX DEPRECIATION	1	100%
STRAIGHT LINE DEPRECIATION (SLN-%) [X % PER ANNUM AS INPUT: AS PER IND. BOXES BELOW]		
% DECLINING BALANCE METHOD OF DEPRECIATION (DB); NEEDS TO BE > 100%	2	150%
% DOUBLE DECLINING BALANCE METHOD OF DEPRECIATION (DDB); NEEDS TO BE > 100%	3	200%
% VARIABLE-RATE DECLINING BALANCE (SLN AT END) (VDB); NEEDS TO BE > 100%	4	150%
SUM-OF-THE-YEARS'-DIGITS (SYD)	5	
% MODIFIED ACCELERATED COST RECOVERY SYSTEM (MACRS); NEEDS TO BE > 100%	6	200%
MODIFIED ACCELERATED COST RECOVERY SYSTEM IN YEARS		10
WRITTEN DOWN VALUE METHOD (WDV) - MAX DEPRECIATON	7	100%
DEPRECIATION METHODS FISCAL:		
STRAIGHT LINE DEPRECIATION (SLN) - MAX DEPRECIATION	1	100%
STRAIGHT LINE DEPRECIATION (SLN-%) [X % PER ANNUM AS INPUT: AS PER IND. BOXES BELOW]		
% DECLINING BALANCE METHOD OF DEPRECIATION (DB); NEEDS TO BE > 100%	2	150%
% DOUBLE DECLINING BALANCE METHOD OF DEPRECIATION (DDB); NEEDS TO BE > 100%	3	200%
% VARIABLE-RATE DECLINING BALANCE (SLN AT END) (VDB); NEEDS TO BE > 100%	4	150%
SUM-OF-THE-YEARS'-DIGITS (SYD)	5	
% MODIFIED ACCELERATED COST RECOVERY SYSTEM (MACRS); NEEDS TO BE > 100%	6	200%
MODIFIED ACCELERATED COST RECOVERY SYSTEM IN YEARS		10
WRITTEN DOWN VALUE METHOD (WDV) - MAX DEPRECIATON	7	100%
ACCELERATED DEPRECIATION (AD)	8	100%

INPUT PER DEPRECIATION CATEGORY			
INVESTMENT AMOUNT BIOPLAT CASE STUDY		IN USE	
AMOUNT *CORPORATE DEPRECIATION [NOT FOR FISCAL PURPOSES]*		**250.000.000,00**	250.000.000,00
RESIDUAL VALUE		**0,00**	0
YEARS	YEARS	**20**	10
METHOD (1=SLN, 2=DB, 3=DDB, 4=VDB, 5=SYD, 6=MACRS, 7=WDV)		**1**	1
SLN-% ALLOWED RATE	%	**0,00%**	
YEARS ALLOWED SLN-%	YEARS	**0**	
WDV ALLOWED RATE	%	**0,00%**	
YEARS ALLOWED WDV-%	YEARS	**0**	
CONVENTION (FOR LEASE PURPOSES; YES=1, 0=NO)		**0**	0
AMOUNT *DEPRECIATION [FISCAL PURPOSES]*		**250.000.000,00**	250.000.000,00
GENERIC UPLIFT % APPLICABLE TO ASSET CATEGORY (1=YES, 0-NO)		**1**	1
RESIDUAL VALUE		**0,00**	0
YEARS	YEARS	**20**	20
METHOD (1=SLN, 2=DB, 3=DDB, 4=VDB, 5=SYD, 6=MACRS, 7=WDV)		**1**	1
SLN-% ALLOWED RATE	%	**0,00%**	
YEARS ALLOWED SLN-%	YEARS	**0**	
WDV ALLOWED RATE	%	**0,00%**	
YEARS ALLOWED WDV-%	YEARS	**0**	
CONVENTION (FOR LEASE PURPOSES; YES=1, 0=NO)		**0**	0

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

CONSTRUCTION PERIOD LINKS

- All depreciation categories are linked to a corporate (accounting purposes) and a fiscal depreciation calculation sheet and feed into the balance sheet:

DEPRECIATION AND INVESTMENTS		
GENERAL ASSUMPTIONS DEPRECIATION		
INPUT PER DEPRECIATION CATEGORY		
INVESTMENT AMOUNT BIOPLAT CASE STUDY		IN USE
FOUNDATION WORKS		NOT IN USE
OTHER CIVIL WORKS		NOT IN USE
OTHER		NOT IN USE
OTHER		NOT IN USE
OTHER		NOT IN USE
DISTRIBUTION NETWORK		NOT IN USE
OTHER		NOT IN USE
CONNECTION / UPGRADE TRANSMISSION		NOT IN USE
OTHER		NOT IN USE
COMMISSIONING / OTHER SITE INFRA / BoP		NOT IN USE
EPC MANAGEMENT [INSURANCE]		NOT IN USE
CONTINGENCY EPC CONTRACT (CONSTRUCTION)		NOT IN USE
CONTINGENCY EPC CONTRACT (EQUIPMENT)		NOT IN USE
CONTINGENCY OVERALL PROJECT COST		NOT IN USE
PRE-OPERATING EXPENSES		NOT IN USE
INTEREST DURING CONSTRUCTION		IN USE
TOTAL OTHER FINANCING EXPENSES		IN USE
ANNUAL INVESTMENTS	NOT IN USE FOR THIS PROJECT	

1. DEPRECIATION (ACCOUNTING PURPOSES)

DEPRECIATION METHODS			%	YRS		
STRAIGHT LINE	SLN	1	100,00%			
DECLINING BALANCE	DB	2	150,00%			
DOUBLE DECLINING BALANCE	DDB	3	200,00%			
VARIABLE-RATE DECLINING BALANCE (SLN AT END)	VDB	4	150,00%			
SUM-OF-THE-YEARS'-DIGITS	SYD	5	NA			
MODIFIED ACCELERATED COST RECOVERY SYSTEM	MACRS	6	200,00%	10	3,5,7,10, 15 or 20	
WRITTEN DOWN VALUE / REDUCING BALANCE METHOD	WDV	7	100,00%			
						1,00

CALCULATION OF NET ASSET POSITIONS

						1
						2022
INVESTMENT AMOUNT BIOPLAT CASE STUDY	AMOUNT	METHOD	YEARS	RESIDUAL	210,00	20,00
					0,00	0,00
						0,50
	4.875.000	1	20	0,00		4631250,00
HELPLINE					4875000,00	243750,00
[LEASE_OPTION; COLUMN "F"; CONVENTION Y/2 YR; 1=YES, 0=NO] HELPLINE					0	0,00

BALANCE SHEET		
EUR		
BACAU	1,00	2
ASSETS	**2022**	**2023**
CASH	1.864.700	1.698.471
RECEIVABLES - DEBTORS	0	0
MAINTENANCE RESERVE	0	0
[CASH] DEBT SERVICE RESERVE(S)	159.990	159.990
(CASH) LEGAL RESERVE	0	0
PREPAID TAXES PAYABLE	0	0
OTHER ASSETS (INVENTORY)	0	0
SUBTOTAL	**2.024.690**	**1.858.461**
PLANT & EQUIPMENT BoY	4.875.000	4.631.250
DEPRECIATION	243.750	243.750
NET FIXED ASSETS	**4.631.250**	**4.387.500**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

FINANCE DURING CONSTRUCTION

- The model provides for 9 pre-defined drawing rules during construction:

FUNDING OF PROJECT		T
FUNDING PRIORITY		
FUNDING OPTION / DRAWDOWN PROFILE		1
1 - ALL E FIRST, THEN ALL D EQUALLY		
2 - HALF E FIRST, THEN ALL D EQUALLY, THEN OTHER HALF E		
3 - ALL E FIRST + SUB. TD, THEN TD		
4 - HALF E + SUB. TD, THEN TD, THEN OTHER HALF E		
5 - ALL FUNDING PROPORTIONALLY		
6 - TD + STD FIRST, THEN E		
7 - E + TD PROPORTIONALLY, NO SUB. TD		
8 - PART-E FIRST, THEN ALL FUNDING PROPORTIONALLY		
9 - PART-E FIRST, THEN ALL FUNDING PROPORTIONALLY, THEN PART-E (PREMIUM / EPC MARGIN)		
STD vs TD FUNDING IS EQUAL IN PRIORITIES 1 & 2, NOT PROPORTIONAL!	>	
ANY AMOUNT **PRE-SPENT (DEV COST) NOT REIMBURSED** BY DRAWING RULES (YES = 1; NO = 0)?		1
AMOUNT PRE-SPENT FALLING OUTSIDE DRAWING REGIME (AMOUNT IS EQUITY FIRST)	EUR MILLION	1.73
% OF PROJECT COST FALLING OUTSIDE DRAWING REGIME (% IS EQUITY FIRST)	%	0%
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
AMOUNT USED IN MODEL AS PRE-SPENT EQUITY NOT-REIMBURSED BY DRAWING RULES	EUR MILLION	1.73
ANY AMOUNT **RETAINED (EQUITY PREMIUM)** UNTIL COD? (YES = 1; NO = 0)?	>	0
AMOUNT OF EQUITY PREMIUM RETAINED	EUR MILLION	0.00
% OF PROJECT COST RETAINED OUTSIDE DRAWING REGIME (% IS EQUITY RETAINED)	%	0%
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
ANY AMOUNT **RETAINED (EPC MARGIN)** UNTIL COD? (YES = 1; NO = 0)?	>	1
AMOUNT OF EPC MARGIN RETAINED	EUR MILLION	0.00
% OF EPC-CONTRACT RETAINED OUTSIDE DRAWING REGIME (% IS EQUITY RETAINED)	%	0%
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		3
AMOUNT USED IN MODEL AS RETAINED EQUITY UNTIL COD	EUR MILLION	0.00

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Finance Options and Construction Period

- Dependent on the draw-down plan the model matches the funding to the construction period spending:

CONSTRUCTION FUNDING CUMULATIVE	TOTAL																								
PRE-DEBT FUNDING BY EQUITY CONTRIBUTIONS	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LONG TERM LOAN DRAWINGS	9.48	0.00	0.00	0.00	0.00	0.23	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.35	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.47	0.47	0.47	2.47	0.00
SUBORDINATED LOAN DRAWINGS	2.03	0.00	0.00	0.00	0.00	0.23	0.24	0.24	0.24	0.24	0.24	0.24	0.24	0.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EQUITY CONTRIBUTIONS	2.03	0.57	0.48	0.48	0.48	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COST OVERRUN EQUITY CONTRIBUTIONS	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NET PRE-OPERATING INCOME / EXPENSE	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL	13.54																								
CUMULATIVE PRE-DEBT FUNDING BY EQUITY		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CUMULATIVE LT LOANS		0.00	0.00	0.00	0.00	0.23	0.47	0.71	0.95	1.19	1.43	1.67	1.91	2.26	2.74	3.21	3.69	4.17	4.64	5.12	5.59	6.07	6.54	7.02	9.48	0.00
CUMULATIVE SUBORDINATED LOANS		0.00	0.00	0.00	0.00	0.23	0.47	0.71	0.95	1.19	1.43	1.67	1.91	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	0.00
CUMULATIVE EQUITY		0.57	1.05	1.53	2.01	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	2.03	0.00
BALANCE		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DEBT COMMITTED UNDRAWN		9.48	9.48	9.48	9.48	9.25	9.01	8.77	8.53	8.29	8.05	7.81	7.58	7.22	6.75	6.27	5.79	5.32	4.84	4.36	3.89	3.41	2.94	2.47	0.00	0.00
CUMULATIVE FUNDING		**0.57**	**1.05**	**1.53**	**2.01**	**2.49**	**2.97**	**3.45**	**3.93**	**4.41**	**4.89**	**5.37**	**5.84**	**6.32**	**6.80**	**7.28**	**7.75**	**8.23**	**8.71**	**9.18**	**9.66**	**10.13**	**10.61**	**11.08**	**13.54**	**0.00**
(BALANCE)	**0.00**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Finance Options and Construction Period

- Dependent on the draw-down plan the model matches the funding to the construction period spending and links to the sources and uses table:

SOURCES & USES OF FUNDS				
EUR				
USES PRE-COMPLETION	2021	2022	TOTAL	%
TOTAL EPC	4.875.000,00	-	**4.875.000,00**	94,1%
EPC-CONTINGENCIES	-	-	**-**	
TOTAL EPC GRANT ELEMENT	-	-	**-**	
TOTAL PRE-OPERATING EXPENSES	-	-	**-**	
WORKING CAPITAL	-	-	**-**	
DEBT SERVICE RESERVE(S)	159.989,93	-	**159.989,93**	3,1%
MAINTENANCE / OTHER RESERVE(S)	-	-	**-**	
TAXATION DURING CONSTRUCTION	-	-	**-**	
INTEREST DURING CONSTRUCTION	108.401,04	-	**108.401,04**	2,1%
OTHER LEGAL & FINANCING EXPENSES	39.792,92	-	**39.792,92**	0,8%
OTHER CONTINGENCIES	-	-	**-**	
TOTAL USE OF FUNDS	**5.183.183,89**	**-**	**5.183.183,89**	**100,0%**
SOURCES PRE-COMPLETION				
PRE-DEBT FUNDING [BY EQUITY]	-	-	**-**	
PRE-DEBT FUNDING REPAYMENT	-	-	**-**	
SENIOR TERM DEBT	3.109.910,34	-	**3.109.910,34**	60,0%
SUBORDINATED DEBT	-	-	**-**	
TOTAL LOAN PROCEEDS	*3.109.910,34*	-	***3.109.910,34***	60,0%
EQUITY	2.073.273,56	-	**2.073.273,56**	40,0%
SHAREHOLDER(S)' LOAN(S)	-	-	**-**	
GRANT	-	-	**-**	
TOTAL FINANCING PROCEEDS	**5.183.183,89**	**-**	**5.183.183,89**	**100,0%**
NET CF FROM FINANCING [GRANT NEEDED]	0,00	0,00	0,00	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part II

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

ELECTRICITY GENERATION SOURCES

- On electricity the Model can deal with all generation sources possible (apart from nuclear) albeit from an economic perspective (P*Q):

CAPACITY DATA		0
NAME PLATE ELECTRICITY GENERATION CAPACITY	MW	1,1
NAME PLATE MWh / YR		9.350
RESOURCE TYPE		0,00
OVERLOAD ALLOWED WHEN AVAILABLE? (YES=1; NO=0)		
% OVERLOAD ALLOWED OF NAME PLATE CAPACITY		
GROSS ANNUAL ELECTRICITY PRODUCTION IN MWh p.a.	MWh	9.350
PROBABILITY - RELATED PRODUCTION FIGURES IN MWh (YES=1; NO=0) 20yrs		0
kWh/kWp NON-PROBABILITY RELATED		0,00
CAPACITY / LOAD FACTOR		86%
DIESEL GENERATED CAPACITY	MW	0,00
STORAGE CAPACITY	MWh	0,00
REFUSED DERIVED FUEL	RDF	
SOLAR ENERGY		
WIND ENERGY		
CHP		
POWER + PRESS (BIOMASS)		
INTERNAL CONSUMPTION		0,00%
INTERNAL CONSUMPTION CHARGED (INCLUDED IN 'EXPORTED' POWER) (YES=1; NO=0)		0
SUBSTATION / GRID AVAILABILITY		100,0%
GRID & INTERCONNECTING STATION - NETWORK LOSSES		0,0%
AVAILABILITY FACTOR (INCL. DEGRADATION AND PLANNED MAINTENANCE)		100,0%
AVAILABILITY FACTOR (EXCL. DEGRADATION AND PLANNED MAINTENANCE)		0,0%
NUMBER OF DAYS A YEAR PLANNED MAINTENANCE	DAYS	0
LOW LOAD CURTAILMENT		0,0%
MAINTENANCE CURTAILMENT PER MW PER ANNUM IN HOURS	HOURS	0
ANNUAL ELECTRICITY PRODUCTION IN MWh	MWh	8.000,0
DEGRADATION FACTOR 1st YEAR		0,00%
1st YR NET PROD. IN MWh AT P50 SPONSOR-MODEL IF MONTHLY FIGURES + 1st YR < 12 MONTHS	MWh	0
ADJUSTMENT FACTOR MONTHLY TO ANNUAL 1st YEAR		0,00%
ANNUAL DEGRADATION FACTOR > 1st YEAR		0,00%

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Other Production has its Own Input or is Linked like Electricity to the same Feedstock Input to calculate the Output

- On other output the Model can deal with production of heat, biodiesel, ethanol, etc. either calculated by the Model or if input has been restricted / insufficient the output from other sources can be used as input:

HEAT PRODUCTION	IN USE	
BIOGAS METHANE CONTENT	%OF GAS	0,00%
ENERGY CONTENT METHANE	kWh/m^3	0,00
EFFICIENCY ELECTRICITY GENERATION	%	0,00%
EFFICIENCY HEAT GENERATION	%	0,00%
LOSSES IN CHP	%	0,00%
ELECTRICITY USED & LOSSES	%	0,00%
HEAT USAGE INTERNAL PROCESS	%	0,00%
LOSSES HEAT	%	0,00%
GAS WEIGHT	kg/m^3	0,00
kWh ELECTRICITY / m^3 GAS		0,00
kWh HEAT / m^3 GAS		0,00
NET HEAT (FOR SELLING) PRODUCED P.A.		MW/th
2022	1	27.500,00
2023	2	27.500,00
2024	3	27.500,00
2025	4	27.500,00
2026	5	27.500,00
2027	6	27.500,00
2028	7	27.500,00
2029	8	27.500,00
2030	9	27.500,00
2031	10	27.500,00

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part II

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

MULTIPLE REVENUE SOURCES

- More than 10 'price / tariff' options are pre-defined; all having the same detailed choices as per the table to the right:

ENERGY CHARGE	IN USE
ENERGY CHARGE	NOT IN USE FOR THIS PROJECT
OTHER CONTRACTUAL OR NON-CONTRACTUAL / MARKET-BASED PRICES	
TARIFFS MINIGRID CUSTOMERS: PRE-PAID	NOT IN USE FOR THIS PROJECT
PRICE DEVELOPMENT POST-PAID METERED CUSTOMERS	NOT IN USE FOR THIS PROJECT
MARKET / POOL PRICE	NOT IN USE FOR THIS PROJECT
HEAT PRICE	NOT IN USE FOR THIS PROJECT
SOLID FERTILIZER PRICE	NOT IN USE FOR THIS PROJECT
LIQUID FERTILIZER PRICE	NOT IN USE FOR THIS PROJECT
DISTRIBUTION NETWORK OPERATORS' PAYMENT (DUoS)	NOT IN USE FOR THIS PROJECT
CAPACITY MARKET CHARGE (PEAK DEMAND)	NOT IN USE FOR THIS PROJECT
EMBEDDED BENEFITS	NOT IN USE FOR THIS PROJECT

ENERGY CHARGE	IN USE	
CURRENCY OF PPA (1=LCY; 2=EUR; 3=USD)	EUR	2
PRICE PER MWh IN PPA-CURRENCY	EUR	0,00
IF PPA IN LCY; % CONVERSION RISK WITH PROJECT COMPANY		0,00%
PRICE IN MWh AS PER RES LAW OR PPA IN (TODAY'S EQUIVALENT OF)	EUR	164,00
	EUR	164,00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
GROSS-UP ON PRICE IN % OF PRICE (FOR TRANSMISSION FOR EXAMPLE)		0,0%
GROSS-UP ON PRICE IN AMOUNT PER MWh (FOR TRANSMISSION FOR EXAMPLE)	EUR	0,00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
INDEXATION		
INDEXATION, IF ANY, FROM DATE OF CONTRACT SIGNING (1), COD (2) OR SPECIFIC DATE (3)		0
SPECIFIC DATE START INDEXATION		
AT SPECIFIC DATE: # MONTHS 1st INDEXATION YEAR		0,0%
YEAR START INDEXATION AT SPECIFIC DATE		0
YEAR START INDEXATION		0
# OF MONTHS 1st YEAR FOR INDEXATION		0,0%
PRICE INCREASED WITH: (1) LOCAL CPI, (2) EUROZONE CPI, (3) US CPI, (4) PPA-INDEXATION %		4
(4) PPA-INDEXATION % PER ANNUM IF NOT CPI		0,00%
(4) PPA-INDEXATION AMOUNT PER ANNUM IF NOT CPI		0,00
CAP PPA PRICE IN CASE OF INDEXATION	EUR	0,00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
INDEXATION 1st YR: (1) (PROPORTIONAL) FULL YEAR, (2) (PROPORTIONALLY) AVERAGED, (3) NOT 1st YR		2
INDENDURE FLOOR: MINIMUM INCREASE IN INDEXATION TO HAVE INDEXATION KICK-IN		0,00%
AVAILABILITY GUARANTEE LEVEL		0,00%
ACCOUNTS RECEIVABLE (IN DAYS)		0

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Multiple Revenue Sources

- The vertical assumption representation through the years at the assumption-sheet allows for immediate evaluation of the development on the input-variable over time but allows as well for easier reporting purposes (business plan, model audit, etc.) per assumption item compared to the usually vertically designed model approaches.

ENERGY CHARGE	IN USE	
CURRENCY OF PPA (1=LCY; 2=EUR; 3=USD)	EUR	2
PRICE PER MWh IN PPA-CURRENCY	EUR	0,00
IF PPA IN LCY; % CONVERSION RISK WITH PROJECT COMPANY		0,00%
PRICE IN MWh AS PER RES LAW OR PPA IN (TODAY'S EQUIVALENT OF)	EUR	164,00
	EUR	164,00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
GROSS-UP ON PRICE IN % OF PRICE (FOR TRANSMISSION FOR EXAMPLE)		0,0%
GROSS-UP ON PRICE IN AMOUNT PER MWh (FOR TRANSMISSION FOR EXAMPLE)	EUR	0,00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
INDEXATION		
INDEXATION, IF ANY, FROM DATE OF CONTRACT SIGNING (1), COD (2) OR SPECIFIC DATE (3)		0
SPECIFIC DATE START INDEXATION		
AT SPECIFIC DATE: # MONTHS 1st INDEXATION YEAR		0,0%
YEAR START INDEXATION AT SPECIFIC DATE		0
YEAR START INDEXATION		0
# OF MONTHS 1st YEAR FOR INDEXATION		0,0%
PRICE INCREASED WITH: (1) LOCAL CPI, (2) EUROZONE CPI, (3) US CPI, (4) PPA-INDEXATION %		4
(4) PPA-INDEXATION % PER ANNUM IF NOT CPI		0,00%
(4) PPA-INDEXATION AMOUNT PER ANNUM IF NOT CPI		0,00
CAP PPA PRICE IN CASE OF INDEXATION	EUR	0,00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
INDEXATION 1st YR: (1) (PROPORTIONAL) FULL YEAR, (2) (PROPORTIONALLY) AVERAGED, (3) NOT 1st YR		2
INDENDURE FLOOR: MINIMUM INCREASE IN INDEXATION TO HAVE INDEXATION KICK-IN		0,00%
AVAILABILITY GUARANTEE LEVEL		0,00%
ACCOUNTS RECEIVABLE (IN DAYS)		0
AVERAGE CHARGE PER MWh [PER UNIT] PER ANNUM		EUR
2022	1	164,00
2023	2	164,00
2024	3	164,00
2025	4	164,00
2026	5	164,00
2027	6	164,00
2028	7	164,00
2029	8	164,00

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

TARIFF TRACEABILITY

- Each revenue stream is linked to a separate P&L line for easy traceability:

PROFIT & LOSS											
EUR	1,00	2	3	4	5	6,00	7	8	9	10	11,00
GORJ COUNTY	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
REVENUES											
INCOME FROM SALES OF ELECTRICITY / SERVICES											
ELECTRICITY CONTRACTED 1	152.520	152.520	152.520	152.520	152.520	152.520	152.520	152.520	152.520	152.520	152.520
ELECTRICITY CONTRACTED 2	0	0	0	0	0	0	0	0	0	0	0
ELECTRICITY SPOT MARKET	0	0	0	0	0	0	0	0	0	0	0
ANCHOR LOAD	0	0	0	0	0	0	0	0	0	0	0
PRE-PAID LOAD	0	0	0	0	0	0	0	0	0	0	0
POST-PAID - METERED	0	0	0	0	0	0	0	0	0	0	0
DISTRIBUTION NETWORK OPERATORS' PAYMENT (DUoS)	0	0	0	0	0	0	0	0	0	0	0
CAPACITY MARKET CHARGE (PEAK DEMAND)	0	0	0	0	0	0	0	0	0	0	0
EMBEDDED BENEFITS	0	0	0	0	0	0	0	0	0	0	0
CONCESSIONAL PAYMENTS	0	0	0	0	0	0	0	0	0	0	0
INCOME FROM HEAT, FERTILIZER, CARBON, GATE FEE, OTHER											
SALE OF HEAT	412.500	412.500	412.500	412.500	412.500	412.500	412.500	412.500	412.500	412.500	412.500
INCOME FROM FERTILIZER (SOLID)	0	0	0	0	0	0	0	0	0	0	0
INCOME FROM BIODIESEL (FAME) / FERTILIZER (LIQUID)	0	0	0	0	0	0	0	0	0	0	0
CARBON CREDITS	0	0	0	0	0	0	0	0	0	0	0
GATE FEE CONTRACTED	0	0	0	0	0	0	0	0	0	0	0
GATE FEE SPOT MARKET	0	0	0	0	0	0	0	0	0	0	0

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Multiple Revenue Sources

- The revenue production sources meet several pricing options: 1) a generic one that will be applicable to all revenue sources if chosen (working with tariff index), relevant for example in a product approach, 2) contractual, including all possible indexation options, and 3) market-based, or any combination.

TARIFFS / PRICES		
GENERIC ASSUMPTIONS PRICES	NOT IN USE FOR THIS PROJECT	
% CONTRACTUAL SALE / [TERM OF] REVENUE AGREEMENT [PPA] / SCHEME	IN USE	
CAPPED AMOUNT IN MWh SOLD UNDER PPA	MWh	0
RESULTING % CAPPED AMOUNT OF NET FULL 1ST YR MWh's		0%
% CONTRACTED OUT OF TOTAL PRODUCTION	%	100%
SDE CAPPED PRODUCTION AMOUNT (NETHERLANDS)	MWh	0,00
% ENERGY CHARGE 1 APPLICABLE OUT OF % CONTRACTED	%	0%
ENERGY CHARGE 1 APPLICABLE AS LONG AS SHL OUTSTANDING (Y=1, N=0)		0
% ENERGY CHARGE 2 APPLICABLE OUT OF % CONTRACTED	%	0%
ENERGY CHARGE 2 APPLICABLE AS LONG AS SHL OUTSTANDING (Y=1, N=0)		0
# YRS CAPPED AMOUNT / % FROM (1) COD OR UNTIL (2) SPECIFIC DATE (0 IF EQUAL TO PPA)		0
YEARS FROM COD (THEREAFTER SPOT MARKET)	YR	0,00
YEARS FROM COD UNTIL SPECIFIC END-DATE CAPPED AMOUNT / % (THEREAFTER SPOT MARKET)	YR	0,00
DATE SIGNING MAJOR REVENUE AGREEMENT		1-jan-21
YEAR SIGNING MAJOR REVENUE AGREEMENT		2021
# OF MONTHS 1st YEAR AFTER SIGNING		100,00%
SALE UNDER REVENUE CONTRACT PRIOR TO COD ALLOWED?		1
NUMBER OF MONTHS PRE-COD SALE UNDER REVENUE CONTRACT	MONTH	0
% OF PRODUCTION UNDER PRE-COD SALE IF NOT 100%		0%
TENOR (FROM COD) OF [POWER PURCHASE -PPA] [REVENUE] AGREEMENT [REFIT SCHEME] IN YRS		20,00

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part II

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

EXPENSE CATEGORIES

- Some 13 expense categories are pre-defined; all having the same detailed choices as per the table to the right:

EXPENSES		
GENERIC ASSUMPTIONS EXPENSES	NOT IN USE FOR THIS PROJECT	
VARIABLE EXPENSES		
VARIABLE O&M	NOT IN USE FOR THIS PROJECT	
FUEL [EXPENSES] [INCOME]	NOT IN USE FOR THIS PROJECT	
PRICE OF FUEL	NOT IN USE FOR THIS PROJECT	
CONSUMABLES	NOT IN USE FOR THIS PROJECT	
ASH DISPOSAL & TRANSPORT COST	NOT IN USE FOR THIS PROJECT	
LAND LEASE - RENT	NOT IN USE FOR THIS PROJECT	
SELLING, GENERAL & ADMIN EXPENSES	NOT IN USE FOR THIS PROJECT	
FIXED EXPENSES		
ADMINISTRATION / HOLDCO CHARGE	IN USE	
OPERATIONS & MAINTENANCE FEE	IN USE	
INSURANCE / BANK FEES	NOT IN USE FOR THIS PROJECT	
PERSONNEL EXPENSES	NOT IN USE FOR THIS PROJECT	
OTHER MAINTENANCE	IN USE	
PARASITIC LOAD AS EXPENSE	NOT IN USE FOR THIS PROJECT	

OPERATIONS & MAINTENANCE FEE	IN USE	
MAINTENANCE FEE AT T_0	EUR MILLION	0.06
	EUR MILLION	0.06
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
FULLY GUARANTEED PERIOD IN YEARS	YEARS	
NOT(-FULLY) GUARANTEED PERIOD IN YEARS (IF < PROJECT HORIZON)	YEARS	
O&M FEE AT T_0	EUR MILLION	0.00
	EUR MILLION	0.00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		0
FULLY GUARANTEED PERIOD IN YEARS	YEARS	
NOT(-FULLY) GUARANTEED PERIOD IN YEARS (IF < PROJECT HORIZON)	YEARS	
GENERIC PRICING ASSUMPTION APPLICABLE FOR THIS EXPENSE CATEGORY? (YES=1; NO=0)		0
PRICE INCREASE AV. INFLATION (1=Local CPI, 2=EUR-zone CPI, 3=USD-zone CPI, 4=Indexation %)		4
INDEXATION PER ANNUM AS FROM COD		0.00%
ACCOUNTS PAYABLE (IN DAYS)		0
TOTAL FIXED O&M FEE PER ANNUM		EUR MILLION
2020	1	0.05
2021	2	0.06
2022	3	0.06
2023	4	0.06
2024	5	0.06
2025	6	0.06
2026	7	0.06
2027	8	0.06
2028	9	0.06
2029	10	0.06

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part II

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Finance Options

- The model provides for funding categories next to each other: 1) equity, 2) subordinated debt tranches or shareholders' loans, and 3) senior debt tranches. Debt can be optimized by any choice of draw-down preference of tranches vis-à-vis each other (for example tranche with lowest interest rate first to reduce interest during construction to maximum).
- One of the debt fields is for Export Credit Agency (ECA)-funding.

SPONSOR(S) EQUITY		
TOTAL PROJECT COST [LESS GRANT]	EUR	1.035.542,60
TARGET EQUITY % OF TOTAL CAPITAL (INCLUDING SUB DEBT)		40,00%
TARGET REAL EQUITY % OF EQUITY [REMAINDER IS SUB DEBT OR SHAREHOLDER LOAN]		100,00%
ACTUAL (REAL) EQUITY % OF TOTAL CAPITAL		40,00%
ACTUAL (REAL) EQUITY AS AMOUNT	EUR	0,00
CORRESPONDING AMOUNT	EUR	414.217,04
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
% OF EQUITY OWNED BY **THE PROJECT SPONSOR**		100,00%
EQUITY FROM UPFRONT PAYMENT CARBON CREDITS	EUR	0,00
GRANT [CAP]	EUR	0,00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
GRANT AS A % OF PROJECT COST		0,00%
GRANT RELEVANT [CAPPED AMOUNT OR THE AMOUNT FROM THE PERCENTAGE]	EUR	0,00
EQUITY NEEDED FROM SPONSOR(S)	EUR	414.217,04
EXCESS GRANT AVAILABLE	EUR	0,00
EQUITY PRE-PAID AT NTP	EUR	0,00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
EQUITY PRE-PAID AT NTP AS % OF TOTAL PROJECT COST		0,00%
CARRIED INTEREST AS % OF EQUITY		0,00%
OPPORTUNITY COST OF EQUITY		14,00%
E-IRR CALCULATION (YES=1, NO=0)		0
COMPENSATION PRE_DEBT FUNDING BY EQUITY DURING CONSTRUCTION		0,00%
SPONSOR SUPPORT AS % OF PROJECT COST		0,00%
SPONSOR SUPPORT AS % OF EQUITY		0,00%
SPONSOR SUPPORT AS AN AMOUNT	EUR	0,00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
SPONSOR SUPPORT OTHER	EUR	0,00
INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
DIVIDEND POLICY		
DIVIDEND DISTRIBUTION CONSTRAINED BY RETAINED EARNINGS (YES = 1, NO = 0)		1
IF CONSTRAINED BY D/E RATIO, CHOOSE MINIMUM D/E RATIO	RATIO	1,30
DIVIDEND DISTRIBUTION CONSTRAINED BY MINIMUM DSCR SENIOR DEBT (YES = 1, NO = 0)		1
IF CONSTRAINED BY DSCR RATIO, CHOOSE MINIMUM DSCR APPLICABLE	RATIO	1,15
GRANT PER 'PROJECT'		
TOTAL PROJECT COST TO BE FUNDED LESS GRANT IN %		100,00%

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

FINANCE OPTIONS

- Allocation of debt is done through either a ‘funding plan’ to be filled out at the SUM-sheet or automatically from the construction-sheet (following D/E choice and drawdown regime), but can also be filled out manually here:

FIN-EXPS	IDC	SENIOR / TERM DEBT		100,00%
		TOTAL SENIOR DEBT IN % OF TOTAL PROJECT FUNDING		60,00%
		TOTAL SENIOR DEBT **COMMITTED**	EUR	0,00
		TOTAL SENIOR DEBT **NEEDED**	EUR	621.325,56
		CAPPED AMOUNT OF SENIOR DEBT ON SPECIFIC PROJECT COST	EUR	621.325,56
		TOTAL FINANCING EXPENSES ALL LOANS (EXCL. IDC)	EUR	6.250,02
		INTEREST DURING CONSTRUCTION - **IDC** (CAPITALISED; IF PAID-OUT IT SHOWS ON SUM-SHEET)	EUR	20873,01
		MINIMISATION OF LOCAL DEBT TRANCHE (YES=1; NO=0)? (OTHERWISE PRO-RATA FUNDING)		0
		ANY OR ALL LOANS SCULPTED BY DSCR? (1=YES; 0=NO)		0
		TARGET DSCR SCULPTING LEVEL SENIOR DEBT	RATIO	0,00
		REFERENCE LEVEL SCULPTED DSCR	RATIO	0,00
		DEBT TRANCHE 1: PRI-COVERED TRANCHE	1	NOT IN USE FOR THIS PROJECT
		DEBT TRANCHE 2: UNCOVERED TRANCHE	2	IN USE
		UNCOVERED TRANCHE APPLICABLE? (YES=1; NO=0)		1
		NAME LEAD BANK / FINANCIAL INSTITUTE		0
		CAPPED AMOUNT TRANCHE 2	EUR	-
		INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
		CAPPED AMOUNT TRANCHE 2 IN MODEL REPORTING CURRENCY	EUR	-
		AMOUNT	EUR	621.325,56
		% OF SENIOR DEBT		100,00%
		DATE SIGNING (START TENOR LOAN)		1-jan-21
		BASE (FLOATING) FUNDING RATE APPLICABLE IN %		7,00%
		MARGIN **CONSTRUCTION** PERIOD IN %		0,00%
		BASE FIXED FUNDING RATE INCL. SWAP RATE IN %		0,00%
		EFFECTIVE INTEREST RATE CONSTRUCTION PERIOD		7,00%
		MARGIN **OPERATIONAL** PERIOD IN %		0,00%
		BASE FIXED FUNDING RATE INCL. SWAP RATE IN %		0,00%
		EFFECTIVE INTEREST RATE OPERATIONAL PERIOD		7,00%
		PERCENTAGE OF INTEREST HEDGED IF FLOATING BASE RATE		0,00%
		INTEREST DURING CONSTRUCTION PAID OUT (1) OR CAPITALIZED (0)		0
		FRONT END FEES IN %		1,00%
		COMMITMENT FEES IN %		0,50%
		UPFRONT FLAT FINANCING COST	EUR	0,00
		INPUT CURRENCY (1=LCY; 2=EUR; 3=USD)		2
		TENOR IN YEARS (INCLUDING GRACE PERIOD)	YEARS	8,00
		GRACE PERIOD IN YEARS (CONVENTION: 1 YR GRACE IS 1st REPAYMENT 1.(2)5 FROM NTP)	YEARS	2,00
		REPAYMENT PER ANNUM (2 OR 4 TIMES)		4
		REPAYMENT STYLE (1 = ANNUITY, 2 = EQUAL INSTALMENTS / LINEAR, 3 = AMORTIZATION, 4 = MANUALLY SCULPTED REPAYMENT, 5 = SCULPTED BY DSCR)		1
		LEVEL DSCR IF SCULPTED REPAYMENT BY DSCR	RATIO	0,00
		CASH SWEEP APPLICABLE (1=YES; 2=NO)		0
		PERCENTAGE CASH SWEEP		0,0%
		CASH SWEEP TRIGGER		0

Allocation following D/E ratio automatically from construction period.

Or, allocation by amount which is often relevant in for example crowd-funding (‘up to EUR 5 mio’) following regulatory constraints.

Allocation by Funding Plan:

SUMMARY SUBORDINATED DEBT / SH LOANS									
					EUR			CONSTRUCTION	OPERATIONAL
	TRANCHE	NAME FI	CURRENCY	AMOUNT	AMOUNT PROJECT	TENOR	GRACE	ALL-IN INTEREST	ALL-IN INTEREST
1	SUBORDINATED DEBT TRANCHE 1	0			0,00	0,00	0,00	0,00%	0,00%
2	SUBORDINATED DEBT TRANCHE 2	0			0,00	0,00	0,00		

SUMMARY DEBT									
					EUR			CONSTRUCTION	OPERATIONAL
	TRANCHE	NAME FI	CURRENCY	AMOUNT	AMOUNT PROJECT	TENOR	GRACE	ALL-IN INTEREST	ALL-IN INTEREST
1	DEBT TRANCHE 1: PRI-COVERED TRANCHE	0			0,00	0,00	0,00	0,00%	0,00%
2	DEBT TRANCHE 2: UNCOVERED TRANCHE	0			621.325,56	8,00	2,00	7,00%	7,00%
3	DEBT TRANCHE 3: ECA-COVERED TRANCHE	0			0,00	0,00	0,00	0,00%	0,00%
4	DEBT TRANCHE 4: UNCOVERED DFI LOAN OTHER	0			0,00	0,00	0,00	0,00%	0,00%
5	DEBT TRANCHE 5: LOCAL BANKS' TRANCHE	0			0,00	0,00	0,00	0,00%	0,00%
6	DEBT TRANCHE 6: OTHER	0			0,00	0,00	0,00	0,00%	0,00%
7	DEBT TRANCHE 7: OTHER	0			0,00	0,00	0,00	0,00%	0,00%
8	DEBT TRANCHE 8: OTHER	0			0,00	0,00	0,00	0,00%	0,00%

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part II

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

ASSET MANAGEMENT

- The model has most depreciation schedules pre-defined, both corporate and fiscal:

DEPRECIATION AND INVESTMENTS		T
GENERAL ASSUMPTIONS DEPRECIATION		
SHOW **FISCAL** DEPRECIATION IN MODEL I.O. **ACCOUNTING** DEPRECIATION? (1=YES; 0=NO)		0
FISCAL DEPRECIATION START AS FROM COD (1) OR END TAX HOLIDAY PERIOD (2)		1
START YEAR FISCAL DEPRECIATION		2020
PERCENTAGE UPLIFT ALLOWED FOR FISCAL DEPRECIATION, IF ANY		0%
DEPRECIATION PERIOD (ALL ASSETS) CAPPED BY TERM CONTRACT / MODEL PERIOD? (1=NO; 0=YES)		1
DEPRECIATION METHODS ACCOUNTING:		
STRAIGHT LINE DEPRECIATION (**SLN**) - MAX DEPRECIATION	1	100%
STRAIGHT LINE DEPRECIATION (**SLN-%**) [**X** % PER ANNUM AS INPUT: AS PER IND. BOXES BELOW]		
% DECLINING BALANCE METHOD OF DEPRECIATION (**DB**); NEEDS TO BE > 100%	2	150%
% DOUBLE DECLINING BALANCE METHOD OF DEPRECIATION (**DDB**); NEEDS TO BE > 100%	3	200%
% VARIABLE-RATE DECLINING BALANCE (SLN AT END) (**VDB**); NEEDS TO BE > 100%	4	150%
SUM-OF-THE-YEARS'-DIGITS (**SYD**)	5	
% MODIFIED ACCELERATED COST RECOVERY SYSTEM (**MACRS**); NEEDS TO BE > 100%	6	200%
MODIFIED ACCELERATED COST RECOVERY SYSTEM IN YEARS		10
WRITTEN DOWN VALUE METHOD (**WDV**) - MAX DEPRECIATON	7	100%
DEPRECIATION METHODS FISCAL:		
STRAIGHT LINE DEPRECIATION (**SLN**) - MAX DEPRECIATION	1	100%
STRAIGHT LINE DEPRECIATION (**SLN-%**) [**X** % PER ANNUM AS INPUT: AS PER IND. BOXES BELOW]		
% DECLINING BALANCE METHOD OF DEPRECIATION (**DB**); NEEDS TO BE > 100%	2	150%
% DOUBLE DECLINING BALANCE METHOD OF DEPRECIATION (**DDB**); NEEDS TO BE > 100%	3	200%
% VARIABLE-RATE DECLINING BALANCE (SLN AT END) (**VDB**); NEEDS TO BE > 100%	4	150%
SUM-OF-THE-YEARS'-DIGITS (**SYD**)	5	
% MODIFIED ACCELERATED COST RECOVERY SYSTEM (**MACRS**); NEEDS TO BE > 100%	6	200%
MODIFIED ACCELERATED COST RECOVERY SYSTEM IN YEARS		10
WRITTEN DOWN VALUE METHOD (**WDV**) - MAX DEPRECIATON	7	100%
ACCELERATED DEPRECIATION (**AD**)	8	100%

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

ASSET MANAGEMENT

Input details depreciation per category:

INPUT PER DEPRECIATION CATEGORY		T
SITE AND ACCESS ROADS		IN USE
AMOUNT *CORPORATE DEPRECIATION [NOT FOR FISCAL PURPOSES]*		0.11
RESIDUAL VALUE		0.00
YEARS	YEARS	20
METHOD (1=SLN, 2=DB, 3=DDB, 4=VDB, 5=SYD, 6=MACRS, 7=WDV)		1
SLN-% ALLOWED RATE	%	0.00%
YEARS ALLOWED SLN-%	YEARS	0
WDV ALLOWED RATE	%	0.00%
YEARS ALLOWED WDV-%	YEARS	0
CONVENTION (FOR LEASE PURPOSES; YES=1, 0=NO)		0
AMOUNT *DEPRECIATION [FISCAL PURPOSES]*		0.11
GENERIC UPLIFT % APPLICABLE TO ASSET CATEGORY (1=YES, 0-NO)		1
RESIDUAL VALUE		0.00
YEARS	YEARS	20
METHOD (1=SLN, 2=DB, 3=DDB, 4=VDB, 5=SYD, 6=MACRS, 7=WDV)		1
SLN-% ALLOWED RATE	%	0.00%
YEARS ALLOWED SLN-%	YEARS	0
WDV ALLOWED RATE	%	0.00%
YEARS ALLOWED WDV-%	YEARS	0
CONVENTION (FOR LEASE PURPOSES; YES=1, 0=NO)		0
FOUNDATION WORKS		IN USE
OTHER CIVIL WORKS		IN USE
GENERATION ASSETS / MACHINERY		IN USE
FINAL ENGINEERING & DESIGN		NOT IN USE
SUBSTATION / GRID AVAILABILITY		IN USE
AIR COOLED CONDENSER		NOT IN USE
MOBILE EQUIPMENT, FLEED		NOT IN USE
CONNECTION / UPGRADE TRANSMISSION		NOT IN USE
INSURANCE		NOT IN USE
COMMISSIONING / OTHER SITE INFRA / BoP		IN USE
EPC MANAGEMENT		NOT IN USE

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

ASSET MANAGEMENT

- Overview schemes net asset positions, both corporate and fiscal:

DEPRECIATION (ACCOUNTING PURPOSES)																	
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
EUR MILLION				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ASSET	**AMOUNT**	**YEARS**	**RESIDUAL**																
SITE AND ACCESS ROADS	0.11	20	0	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
FOUNDATION WORKS	0.99	15	0	0.05	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.02
OTHER CIVIL WORKS	1.33	15	0	0.07	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.02
GENERATION ASSETS / MACHINERY	5.06	15	0	0.25	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.34	0.08
FINAL ENGINEERING & DESIGN	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SUBSTATION / GRID AVAILABILITY	0.62	15	0	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.01
AIR COOLED CONDENSER	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MOBILE EQUIPMENT, FLEED	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONNECTION / UPGRADE TRANSMISSION	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSURANCE	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
COMMISSIONING / OTHER SITE INFRA / BoP	0.45	15	0	0.02	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.01
EPC MANAGEMENT	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONTINGENCY EPC CONTRACT (CONSTRUCTION)	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONTINGENCY EPC CONTRACT (EQUIPMENT)	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CONTINGENCY OVERALL PROJECT COST	0.96	15	0	0.05	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.02
PRE-OPERATING EXPENSES	2.76	15	0	0.14	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.05
ANNUAL INVESTMENTS	10.12	10	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.60	0.50	0.50	0.50	0.50
INTEREST DURING CONSTRUCTION	0.42	10	0	0.03	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.01	0.00	0.00	0.00	0.00	0.00
TOTAL OTHER FINANCING EXPENSES	0.23	10	0	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00	0.00	0.00	0.00	0.00
				0.66	**0.88**	**0.88**	**0.88**	**0.88**	**0.88**	**0.88**	**0.88**	**0.88**	**0.88**	**1.29**	**1.42**	**1.32**	**1.32**	**1.32**	**0.71**
TOTALS	**23.04**		0.00	0.66	1.54	2.42	3.30	4.19	5.07	5.95	6.83	7.71	8.59	9.89	11.30	12.62	13.94	15.25	15.96

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Part III Functioning of the Model

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part III

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

GETTING STARTED

- The Model caters for 50 projects in an active mode and 10 sensitivities.
- For use of the Model for a project one of the columns at the A-sheet should be used, either an empty one or it should be emptied. The assumptions-overview sheet “A-O” indicates where any input area has been used:

OVERVIEW INPUT ASSUMPTIONS

THIS SHEET ALLOWS FOR QUICK REVIEW OF ASSUMPTION-CELLS HAVING VALUES (FROM EARLIER USE) THAT MAY NOT BE RELEVANT FOR THE ACTIVE PROJECT

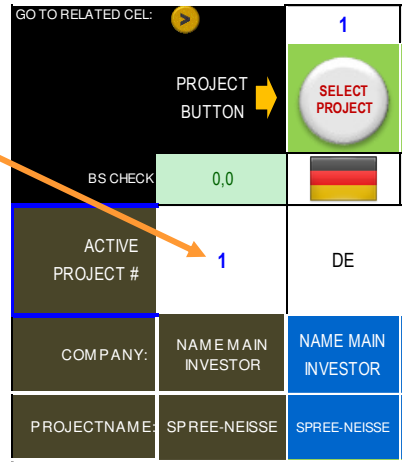
ACTIVE PROJECT															
PROJECT NR's	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A_SHEET															
TIMING															
# OF MONTHS CONSTRUCTION	24,0	12,0	12,0	12,0	12,0	12,0	24,0	24,0	12,0	12,0	12,0	12,0	24,0	24,0	12,0
CONSTRUCTION PHASE															
MANUAL INPUT CONSTRUCTION PHASE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
SUB-TOTAL PROJECT COST	1816000,0	4875000,0	5881653,0	0,0	0,0	0,0	2166660,0	0,0	0,0	0,0	0,0	0,0	41666666,7	35000000,0	0,0
OPERATIONAL PHASE															
CAPACITY DATA	16000	8000	8766	994	8766	8766	0	0	4383	8766	8766	8766	25000	0	8766
OTHER CAPACITY DATA & CARBON CREDITS	0	27500	0	0	0	0	0	0	0	0	0	0	0	0	0
CARBON CREDITS	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
CAPACITY USAGE															
ENERGY CHARGE	110	99	0	0	0	0	0	0	12	0	0	0	97	0	0
ENERGY CHARGE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MARKET / POOL PRICE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEAT PRICE	0	55	0	0	0	0	0	0	0	0	0	0	0	0	0
EXPENSES															
VARIABLE EXPENSES															
VARIABLE O&M	0,0	18,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	10790000,0	0,0	0,0	0,0	0,0
FUEL [EXPENSES] [INCOME]	23000	9638	0	0	0	0	195000	0	0	0	0	0	10000	794492	0
PRICE OF RAW MATERIAL / FUEL	23,0	80,0	0,0	0,0	0,0	0,0	23,0	0,0	0,0	0,0	0,0	0,0	720,0	600,0	0,0
CONSUMABLES	250000,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	3596666,7	600000,0	0,0
ASH DISPOSAL & TRANSPORT COST	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
LAND LEASE - RENT	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	28395,0	0,0
SELLING, GENERAL & ADMIN EXPENSES	0,0	0,0	0,0	0,0	0,0	0,0	0,2	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0
FIXED EXPENSES															
ADMINISTRATION / HOLDCO CHARGE	1750,0	65000,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	125000,0	0,0
OPERATIONS & MAINTENANCE FEE	80000,0	0,0	137779,8	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	324000,0	0,0
INSURANCE / BANK FEES / LICENSE FEE	20000,0	5000,0	0,0	0,0	########	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	460000,0	0,0
PERSONNEL EXPENSES	35000,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	864000,0	1350030,0	0,0
MIGA COVERAGE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
PARASITIC LOAD AS EXPENSE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
TAX & DUTIES; RESERVES															
CORPORATE INCOME TAX (CIT)	25,2	25,2	16,3	0,0	0,0	0,0	25,3	25,3	0,0	0,0	0,0	0,0	25,1	25,1	0,0
EDUCATION TAX	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
COMMUNITY CONTRIBUTION	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
VALUE ADDED TAX	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
WITHHOLDING TAX DIVIDEND	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
OTHER TAX	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
(LEASE) TAXATION REAL ESTATE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DSRF 1 (SENIOR DEBT ONLY)	1,0	1,0	0,0	0,0	0,0	0,0	1,0	1,0	0,0	0,0	0,0	0,0	1,0	1,0	0,0
DSRF 2 (SUB DEBT ONLY)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DSRF 1 & 2	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
MAINTENANCE RESERVE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
WORKING CAPITAL RESERVE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
COST MATCHING RESERVE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
VAT REIMBURSEMENT RESERVE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
ASSET REVALUATION RESERVE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
LEGAL RESERVE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
CASH BALANCE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
INVENTORY	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
ACCOUNTS RECEIVABLE / DEBTORS	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
ACCOUNTS RECEIVABLE OTHER	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
ACCOUNTS PAYABLE / CREDITORS	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DEPRECIATION AND INVESTMENTS															
FISCAL DEPRECIATION	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
INVESTMENTS ANNUALLY	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
FUNDING OF PROJECT															
FUNDING PRIORITY	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0	5,0
SPONSOR(S) EQUITY	0,3	0,4	0,2	1,0	1,0	0,4	0,4	0,4	0,5	1,0	1,0	1,0	1,0	0,8	1,0
GRANT (CAP)	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
EQUITY PRE-PAID AT NTP	0,0	0,0	168340,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
OPPORTUNITY COST OF EQUITY	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
SPONSOR SUPPORT AS % OF PROJECT COST	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
SPONSOR SUPPORT AS % OF EQUITY	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
SPONSOR SUPPORT AS AN AMOUNT	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
SPONSOR SUPPORT OTHER	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DIVIDEND CONSTRAINT D/E RATIO	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3	1,3
DIVIDEND CONSTRAINT DSCR RATIO	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2	1,2
PROJECT COST NET OF GRANT	1,0	1,0	0,4	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	1,0	0,4	1,0	1,0
SHORT TERM DEBT / BRIDGE LOAN	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
SUBORDINATED OR UNSECURED DEBT / REDEEMABLE SHARES															
SUB DEBT % OF TOTAL FUNDING	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
ANY SUB DEBT SCULPTED	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
SUBORDINATED DEBT TRANCHE 1															
AMOUNT	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
SUBORDINATED DEBT TRANCHE 2															
AMOUNT	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
SENIOR / TERM DEBT															
ANY SENIOR DEBT SCULPTED	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DEBT TRANCHE 1: PRI-COVERED TRANCHE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,1	0,1	0,0	0,0	0,0	0,0	0,0	0,0
DEBT TRANCHE 2: UNCOVERED TRANCHE	0,1	0,1	0,1	0,0	0,0	0,0	0,1	0,1	0,0	0,0	0,0	0,0	0,1	0,1	0,0
DEBT TRANCHE 3: ECA-COVERED TRANCHE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DEBT TRANCHE 4: UNCOVERED DFI LOAN OTHER	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DEBT TRANCHE 5: LOCAL BANKS' TRANCHE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DEBT TRANCHE 6: OTHER	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DEBT TRANCHE 7: OTHER	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DEBT TRANCHE 8: OTHER	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
DRAWDOWN PROFILE	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
MANUALLY SCULPTED PROFILES															

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

GETTING STARTED

- For use of the Model for a project one of the columns D – AB at the A-sheet should be used by hitting a project button:

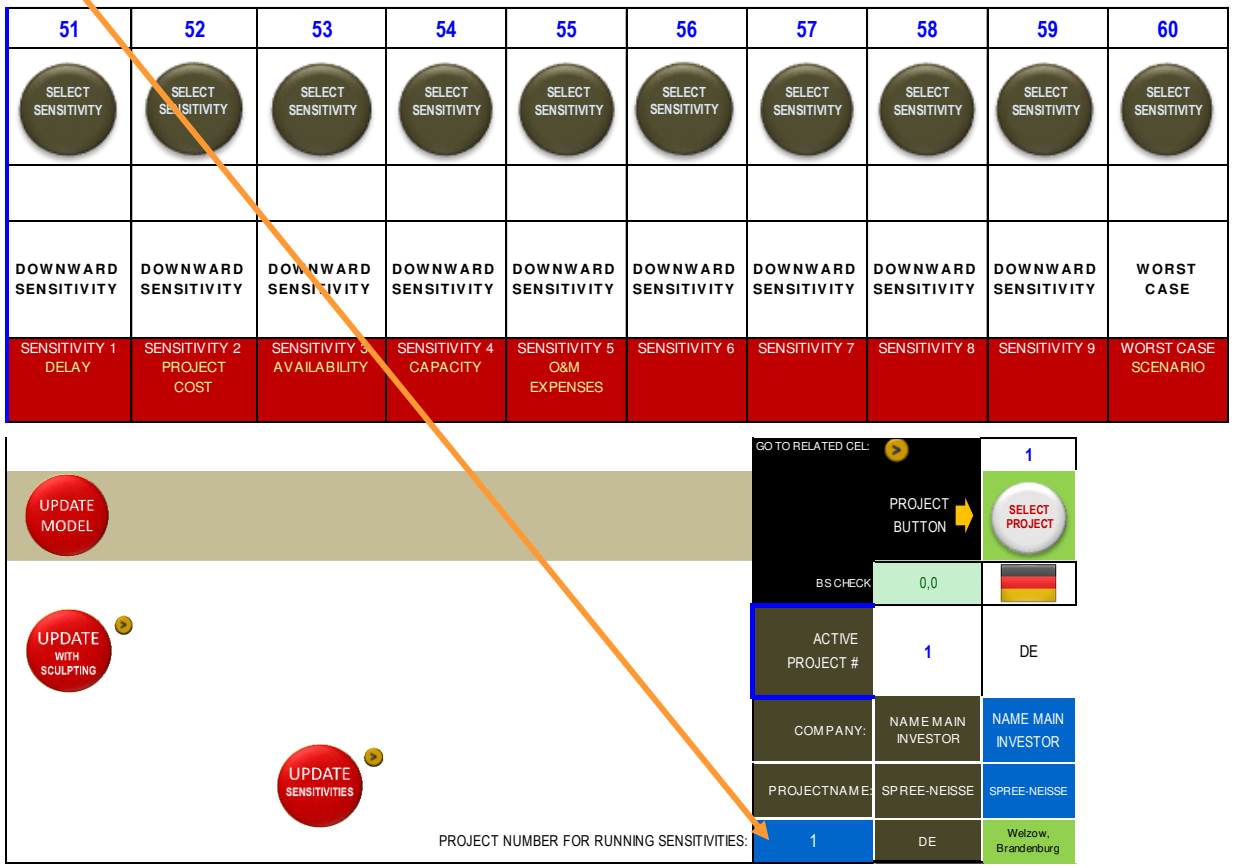
- All input in that specific column will then be used in the 'c'- column of the assumption sheet. The Project chosen shows at the top of the A-sheet **[A: cell B-6]** :



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

GETTING STARTED

- The Model allows for 10 sensitivities. The Project for which the sensitivities will be performed is chosen in **[A: cell B-9]** of the A-sheet. This can be a different project compared to the active project.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Minimal Input & Default Values

- The Model functions already with minimal input (and use of default values, see below):

  - Month(s) construction **[A: line-23]**
  - An amount at construction cost **[A: line->536]**
  - A production figure **[A: line-647]**
  - A tariff **[A: line-1538]**

- Default values are included at input-cells that will not harm the 'business case' otherwise such as:

  - Project horizon is 25 year **[A: line-36]**
  - Exchange rates at 1:1:1; nominal reporting **[A: line-C51]**
  - Averaged spending during construction period **[A: line-649 & A: line-532]**
  - Capacity and availability figures production at 100% **[A: line->689]**
  - Contractual offtake is 100% **[A: line-1482]** and also for 25 years **[A: line-1497]**
  - Depreciation is by default set at 20 or 25 years and at straight line method without residual values **[A: line-3189 and A: line-3190 and below]**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Minimal Input & Default Values

- The BIOPAT minimal input are reported in II-1 in this document. In addition, the default values filled out already are:

  - The corporate taxation mode is used instead of the fiscal taxation mode, hence, the financial statements show the accounting figures not the fiscal ones **[A: line-3156]**
  - Funding priority of a project is set at 'all funding proportionally'. **[A: line-3582 / 3595]**
  - The default value for the opportunity cost of equity is set at 14% **[A: line-3630]**
  - Default values for dividend policy are set at: **[A: line-3640-3643]**
  - Out of the ten debt categories only one is filled out regarding tenor and repayment style with both the linked BIOPLAT minimal input and certain default values like 2 or 4 times a year repayment **[A: line-3786 & 3801-04]**

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part III

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Main Model Choices

- The Model indicates certain model choices in addition to the usual choices to reach a bankable proposition. These are shown at the SUM-sheet:

1. Contingencies: this indicates if the active version has contingencies included or not. The Model allows for easy distinguishing for the two versions: i) including contingencies for the Finance Plan, and 2) w/o contingencies for the base case financial analysis. The Model Choice can be found at **[A: line-14]**
2. Financial Completion: in projects where 'financial completion' (FCD) is defined by the banks involved the reduction in recourse, if any, at the Commercial Operations Date (COD) is postponed until the FCD. FCD can only be declared for example if 4 quarters show operational data in accordance with forecast. For the 'softer', 'qualitative' bankability parameters this is an important feature. The Model Choice can be found at **[A: line-34]**
3. Model Input Currency: this Model-choice shows whether the choice is made to overrule all input-parameters in 1 currency. Most projects have more than 1 currency involved. The Model allows a currency option out of EUR/USD/LCY at each input-variable. If not filled the input value will be the reporting value; if overruling is opted for than the value will be this input-currency. See example in Annex 1. **[A: line-64]**

SUMMARY	
SPREE-NEISSE	
SUMMARY MAIN MODEL CHOICES	
FINANCE PLAN INCLUDING CONTINGENCIES	YES
'FINANCIAL COMPLETION' APPLICABLE	NO
ALL MODEL INPUT IN 1 CURRENCY	NO
MODEL OUTPUT CURRENCY	EUR
REPORTING YR **NOT** CALENDAR YR	NO
MANUAL INPUT CONSTRUCTION PERIOD	NO
PROBABILITY SCENARIO	P50
INFLATION ADJUSTMENT	YES
OVERHAUL INVESTMENTS	NO
ANNUAL INVESTMENTS	NO
CASH BALANCE	NO
ALL EQUITY FUNDING CONSTRUCTION	NO
SCULPTED SENIOR DEBT	NO
SCULPTED JUNIOR DEBT	NO
DEPRECIATION CAPPED BY MODEL HORIZON	NO
FISCAL DEPRECIATION I.O. CORPORATE	NO
LEGAL RESERVE	NO
THIN CAPITALISATION RULE	
# OF SENSITIVITY SCENARIOS WORST_CASE	9

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Main Model Choices

4. Model Output Currency: this model choice can be found at **[A: line-65]**
5. Reporting Year: the reporting year may differ from the calendar year which can be indicated at **[A: line-37]**
6. Manual Input Construction Period: if the use of manual input is indicated then the construction sheet will use manual input, it is indicated at **[A: line-532]**
7. Probability Scenario: the choice of probability scenario is shown at the summary sheet to ensure it is clear which scenario is active since it has tremendous bankability implications. **[A: line-681]**
8. Inflation Adjustment: puts the model in either real or nominal values at **[A: line-66]**
9. Overhaul Investments: indicates whether during the operational period overhaul investments are planned and the assumptions for that have been filled out in the Model at: **[A: line-3564]**
10. Annual Investments: similar at **[A: line-3564]**
11. Cash Balance: banks may require a cash balance to be maintained which increases a bit the bankability which is filled-out at **[A: line-3123]**
12. All Equity Funding Construction: the main model choices also indicate 'all equity funding' which improves bankability (construction risk out of equation for debt providers) and might reduce construction budget (no interest during construction).

SUMMARY		
SPREE-NEISSE		
SUMMARY MAIN MODEL CHOICES		
FINANCE PLAN INCLUDING CONTINGENCIES	YES	
'FINANCIAL COMPLETION' APPLICABLE	NO	
ALL MODEL INPUT IN 1 CURRENCY	NO	
MODEL OUTPUT CURRENCY	EUR	
REPORTING YR **NOT** CALENDAR YR	NO	
MANUAL INPUT CONSTRUCTION PERIOD	NO	
PROBABILITY SCENARIO	P50	
INFLATION ADJUSTMENT	YES	
OVERHAUL INVESTMENTS	NO	
ANNUAL INVESTMENTS	NO	
CASH BALANCE	NO	
ALL EQUITY FUNDING CONSTRUCTION	NO	
SCULPTED SENIOR DEBT	NO	
SCULPTED JUNIOR DEBT	NO	
DEPRECIATION CAPPED BY MODEL HORIZON	NO	
FISCAL DEPRECIATION I.O. CORPORATE	NO	
LEGAL RESERVE	NO	
THIN CAPITALISATION RULE		
# OF SENSITIVITY SCENARIOS WORST_CASE	9	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Main Model Choices

13. Sculpted Senior Debt: [A: line-3736]
14. Sculpted Junior Debt: [A: line-3664]
15. Depreciation capped by Model Horizon: if cap is chosen the depreciation will be set to match in years the model horizon period otherwise it will use depreciable years for the asset [A: line-3160]
16. Fiscal Depreciation vs Corporate Depreciation: the choice will determine which statements are shown, fiscal or corporate. The E- and E2 Sheets show the corporate and fiscal depreciation schemes, resp. [A: line-3156]
17. Legal Reserve: [A: line-3116]
18. Thin Capitalisation Rule: a certain maximum debt allowed in a finance structure. [A: line-3739]
19. Annual Investments: similar at [A: line-3564]
20. Nr of Sensitivities-scenarios: shows the number of sensitivities out of a total of 10. [A: line-BB18]

The Model can have other main choices relevant for a user and can be added in any subsequent version of the Model.

SUMMARY		
SPREE-NEISSE		
SUMMARY MAIN MODEL CHOICES		
FINANCE PLAN INCLUDING CONTINGENCIES	YES	
'FINANCIAL COMPLETION' APPLICABLE	NO	
ALL MODEL INPUT IN 1 CURRENCY	NO	
MODEL OUTPUT CURRENCY	EUR	
REPORTING YR **NOT** CALENDAR YR	NO	
MANUAL INPUT CONSTRUCTION PERIOD	NO	
PROBABILITY SCENARIO	P50	
INFLATION ADJUSTMENT	YES	
OVERHAUL INVESTMENTS	NO	
ANNUAL INVESTMENTS	NO	
CASH BALANCE	NO	
ALL EQUITY FUNDING CONSTRUCTION	NO	
SCULPTED SENIOR DEBT	NO	
SCULPTED JUNIOR DEBT	NO	
DEPRECIATION CAPPED BY MODEL HORIZON	NO	
FISCAL DEPRECIATION I.O. CORPORATE	NO	
LEGAL RESERVE	NO	
THIN CAPITALISATION RULE		
# OF SENSITIVITY SCENARIOS WORST_CASE	9	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Main Model Choices

- The Key Dates also show on the Summary-sheet. The choices regarding timing are made at the top of the A-sheet in the following timing-box:

TIMING		
DATES		
	TODAY	2021-06-29
TIMING PROJECT(S)		
SIGNING LOAN DOCUMENTATION (START TENOR (FIRST) LOAN = CP's MET - DRAWDOWN POSSIBLE)	FC	2021-01-01
START CONSTRUCTION (NOTICE TO PROCEED = FINANCIAL CLOSE (FC) + [...] m)	NTP	2021-01-01
# OF MONTHS CONSTRUCTION		24
TARGET PHYSICAL COMPLETION PROJECT	TCD	2023-01-01
PRE-COMPLETION (IN CASE OF PHASED APPROACH)		
MONTHS BETWEEN TARGET AND ACTUAL PHYSICAL COMPLETION		0
ACTUAL COMPLETION DATE	ACD	2023-01-01
# OF MONTHS ACCEPTANCE TESTS		0
PROJECT ACCEPTANCE DATE (PHYSICAL COMPLETION DATE)	PCD	2023-01-01
MONTHS BETWEEN PROJECT ACCEPTANCE AND COD		0
COMMERCIAL OPERATION DATE (RELEASE PROJECT COMPLETION GUARANTEE, IF ANY)	COD	2023-01-01
TOTAL NUMBER OF MONTHS CONSTRUCTION PERIOD		24
LONG STOP DATE EPC-CONTRACT	LSD	
# OF QUARTERLY PERIODS BETWEEN COD AND FCD		0
FINANCIAL COMPLETION DATE (RELEASE SCHEDULED DEBT 'COMPLETION' GUARANTEE, IF ANY)	FCD	2023-01-01
MODEL FORECAST PERIOD (FOR REFERENCE: TENOR PPA)	YR	10
START FINANCIAL (OPERATIONAL) REPORTING YEAR		1-jan

KEY DATES			
CONSTRUCTION PERIOD			
START CONSTRUCTION	NTP	1-1-2021	
# OF MONTHS CONSTRUCTION		24	
ACTUAL COMPLETION DATE	ACD	1-1-2023	
# OF MONTHS ACCEPTANCE TESTS		0	
PHYSICAL COMPLETION DATE	PCD	1-1-2023	
COMMERCIAL OPERATIONS DATE	COD	1-1-2023	
FINANCIAL COMPLETION DATE	FCD	1-1-2023	
MONTHS BETWEEN COD AND FCD		0	
LONG STOP DATE EPC CONTRACT	LSD		
OPERATIONAL PERIOD			
TENOR PPA IN YEARS	YR	10	
GUARANTEED O&M IN YEARS			
NON-GUARANTEED O&M IN YEARS			
TERM LAND LEASE	YR	0	
MODEL FORECAST PERIOD	YR	10	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part III

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

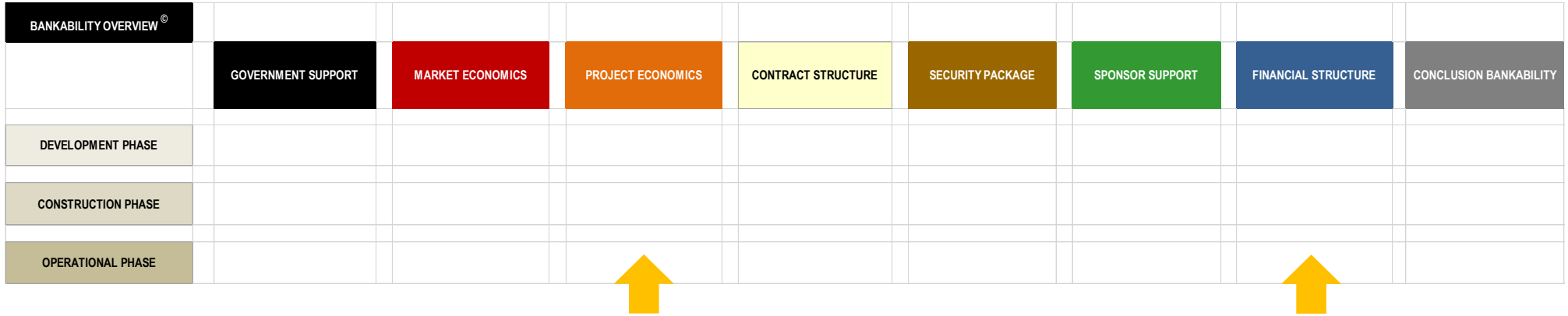
BANKABILITY

- ‘Bankability’ is defined by the BankabilityLab Foundation as a proposition that is structured such that both equity and debt will meet requirements of the majority of investors and banks. Hence, a bankable proposition would pass the test on internal policy documents of most banks and investors. ‘Syndication’ is deemed possible upfront and ‘securitization’ at a later stage as well.
- Internal policy documents are documents guiding personnel in evaluating renewable energy propositions. If a proposition meets most or all of pre-set policy requirements the chance that credit analysts will be positive regarding a certain proposition and positive with the least number of conditions to any investment or credit recommendation it is deemed bankable. Therewith the chance a bank would be able to lead arrange the funding is high.
- A bankable proposition not necessarily will attract financing. For example, a concentrated solar energy project might be bankable from a structuring point of view (meets internal policy document) but might not be preferred by banks in that specific country over PV projects.
- The other way around is also relevant: projects can attract financing although they are not bankable as per definition mentioned above. For example, a project might have the requirement from lenders to ‘top-up’ the debt service reserve by the sponsor of the project for whatever reason a shortfall would emerge. Sponsors accepting such a clause are not the ones you might deem bankable (the mechanism is a full recourse financing which most credible sponsors will not accept).

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

The Model and Bankability

- The Model has been constructed to derive at balanced and independently drafted bankability propositions. Balanced in such way that all stakeholders are served in their best interest vis-à-vis the other stakeholders. To that extent the Model also has a lot of non-quantitative parameters incorporated to make an overall-weighting on bankability. External sources are incorporated as well like the scoring of a certain country on 'regulatory aspects', etc. This weighted scoring on bankability is possible with the Model if the module is active.



- In this assignment the restriction is made to financial economic parameters only in relation to bankability, from the perspective of equity-providers, debt providers and other stakeholders. Hence, not the full weighted bankability approach.

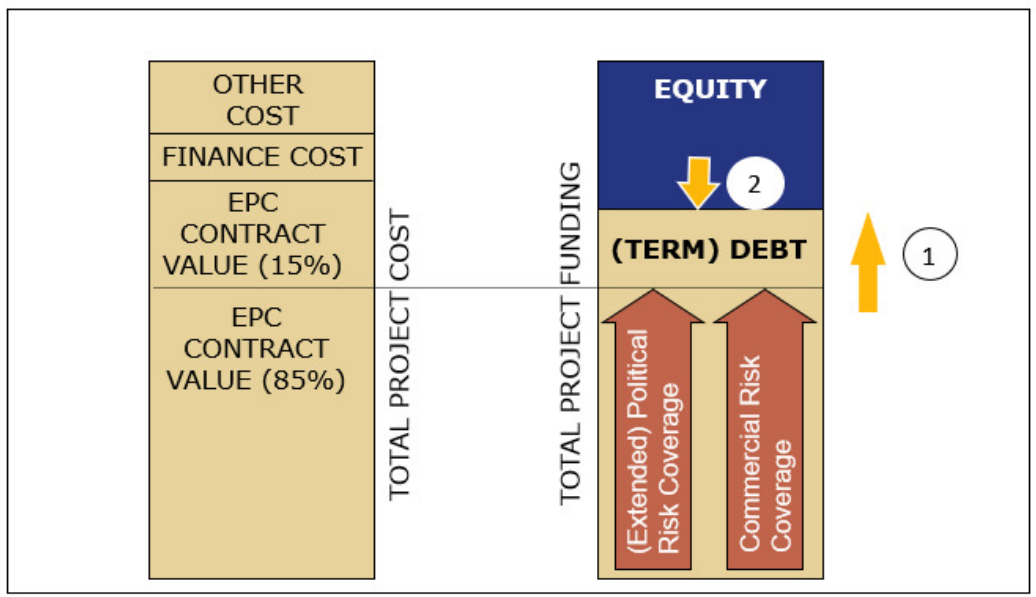
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

BANKABILITY CONTEXT

PROJECT ECONOMICS

Least-Cost Approach is Prime Objective

1. Sufficient coverage of political/commercial risks through Export Credit Agencies / or other (development banks for example), and suffiient debt service capacity
2. Sufficient (contingent, i.e. sponsor support) equity contribution
3. Bankable project documentation (incl. framework & concession documents)



Only a certain %-portion of the total EPC contract can be risk insured
Source. Buiting, Market Sounding ElectriFI, Brussels September, 2014.

- For debt providers the tariff does not need to be as low as possible. The higher the tariff the shorter the debt tenor can be and the more room in the cash flows to negotiate reasonably high 'debt service coverage ratios (DSCR)'. DSCR-levels are key for debt providers and are between required minimum 1.10-1.30x in most of the cases.
- For equity providers the tariff does not need to be as low as possible either. In fact, the higher the tariff the higher the possibility of excess equity-IRR's which are often having required minimum levels of 15% in emerging (bio-energy) markets or new technologies although that may be much lower in the case of impact investors.

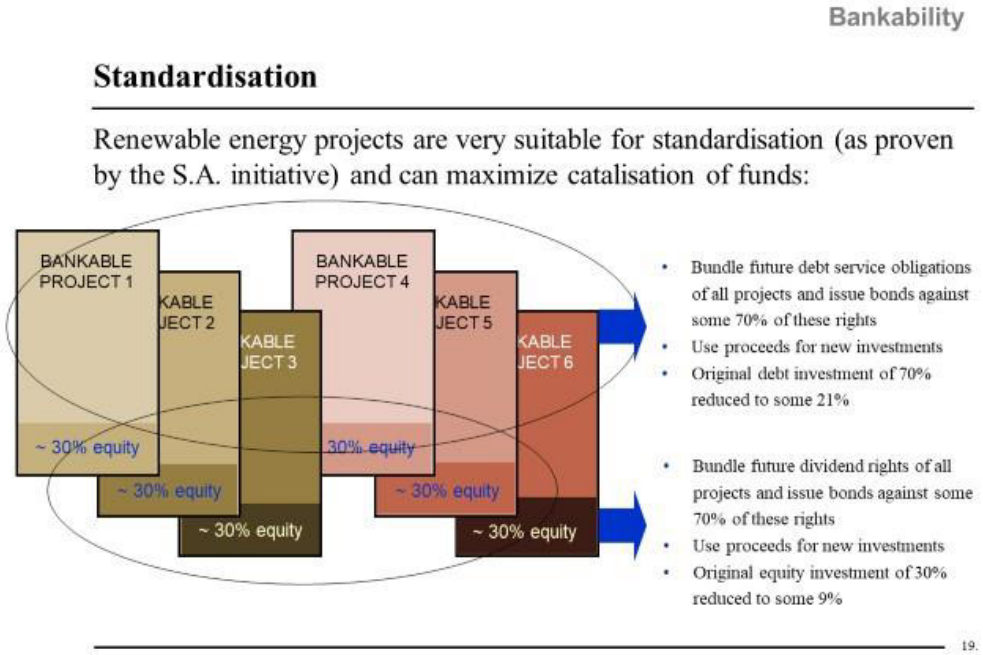
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part III

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Model Choices and Bankability

- Bankability boundaries are per case determined by the interests of the stakeholders involved: equity investors, debt providers, regulatory commissions and the general public.
- Bankabilty boundaries from a scaling perspective (increase of renewable energy sources in shortest time possible, globally) are determined upfront by 'syndication' possibilities and afterwards by 'securitization' possibilities (which should be taken into account upfront from a structuring perspective).
- Syndication upfront enlarges the pool of funders. Securitization (for example green bonds) enlarges such pool of funders in the future. Securitization requires similarly structured transactions, a strong common denominator.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part III

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Example Grant and Equity Options

- Example question: is the project's cash flow capable to service debt and simultaneously generate an equity IRR of minimum 10-15% (hard currency) in the version of the project presented by the developers?
- Case study 2 Ukraine comprises an investment into a 2G ethanol production facility that will produce during a period of 25 years 33,400 tonnes of ethanol and produce electricity from 10.88 MWe installed capacity using the produce from 30,000 ha of MUC land. The base case does not yield sufficient DSCR and equity returns. Assuming a possible grant, from say the Innovation Fund, at least lifts the equity returns to a possible level of investment readiness (the upper diagram to the right is without grant, the lower is with grant).

	100	2	3	4	5	6,00	7	8	9	10
DEBT SERVICE CAPACITY	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
NET PROFIT	-6.149.300	-5.625.844	-5.071.442	-4.483.936	-3.861.014	-3.200.199	-2.498.838	-1.754.086	-962.894	-139.373
INTEREST & PREFERRED DIVIDEND	5.494.120	5.078.458	4.632.927	4.155.380	3.643.517	3.094.873	2.506.803	1.876.475	1.200.852	476.680
DEPRECIATION	6.905.578	6.905.578	6.905.578	6.905.578	6.905.578	6.905.578	6.905.578	6.905.578	6.905.578	6.905.578
CHANGE IN WORKING CAPITAL [PRE-DIVIDENDS]	0	0	0	0	0	0	0	0	0	0
CHANGE IN WORKING CAPITAL [POST-DIVIDENDS]	0	-26	0	0	0	0	0	0	0	0
ADDITIONAL CASH	0	0	0	0	0	0	0	0	0	0
ANNUAL INVESTMENT	0	0	0	0	0	0	0	0	0	0
TOTAL CASHFLOW FOR DSCR CALCULATION	6.250.399	6.358.166	6.457.063	6.577.022	6.688.082	6.800.251	6.913.543	7.027.967	7.143.536	7.242.885
TERM DEBT REPAYMENT	5.784.411	6.200.074	6.645.605	7.123.152	7.635.014	8.183.659	8.771.729	9.402.057	10.077.680	10.801.852
SHORT TERM DEBT REPAYMENT	0	0	0	0	0	0	0	0	0	0
SUB DEBT REPAYMENT / SHARE REDEMPTION	0	0	0	0	0	0	0	0	0	0
INTEREST TERM LOAN(S)	5.494.120	5.078.458	4.632.927	4.155.380	3.643.517	3.094.873	2.506.803	1.876.475	1.200.852	476.680
INTEREST SUBORDINATED LOAN(S) / PREF DIVIDEND	0	0	0	0	0	0	0	0	0	0
INTEREST SHORT TERM LOAN(S)	0	0	0	0	0	0	0	0	0	0
TOTAL DEBT SERVICE	11.278.532	11.278.532	11.278.532	11.278.532	11.278.532	11.278.532	11.278.532	11.278.532	11.278.532	11.278.532
DEBT SERVICE COVERAGE RATIO TERM DEBT	0,55	0,56	0,57	0,58	0,59	0,60	0,61	0,62	0,63	0,64
DEBT SERVICE COVERAGE RATIO ALL DEBT	0,554	0,564	0,573	0,583	0,593	0,603	0,613	0,623	0,633	0,642

SUMMARY EQUITY RETURNS				
CASE STUDY 2		LEVERAGED		
EQUITY RETURNS	YRS	INVESTMENT*	NPV	IRR
		EUR		
POST-TAX NET CASH FLOW	10	-53.739.668,17	-46.082.944,79	#GETAL!
	15	-53.739.668,17	-39.466.361,09	-8,47%
	20	-53.739.668,17	-36.980.217,71	-2,41%
	25	-53.739.668,17	-34.562.025,08	1,01%
* NET INVESTMENT (LESS PREMIUM)				

SUMMARY EQUITY RETURNS				
CASE STUDY 2		LEVERAGED		
EQUITY RETURNS	YRS	INVESTMENT*	NPV	IRR
		EUR		
POST-TAX NET CASH FLOW	10	-50.000.000,00	5.008.149,06	3,04%
	15	-50.000.000,00	10.427.629,22	8,03%
	20	-50.000.000,00	13.175.701,88	9,89%
	25	-50.000.000,00	15.047.184,75	10,91%
* NET INVESTMENT (LESS PREMIUM)				

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part III

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Example Debt

- Debt providers can play a large role in making projects bankable, in specific with tenor and interest rate. More debt is not possible without changes in project cost or tariff and more equity is also not an option. Hence, assuming the interest rate quoted is market conform the only option debt providers have is extending the tenor of the loan to for example 15 years (quite common with development banks).
- For the preliminary feasibility study of the Ukraine 1 case study the tenor has been extended a bit to reduce the external support needed from grants (still some 40% required on the preliminary assumptions).

	0,00	1	2	3	4	5,00	6	7	8	9	10,00	11	12	13	14
DEBT SERVICE CAPACITY	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
NET PROFIT	-844.103	-1.606.969	-1.381.322	-1.139.461	-880.220	-602.350	-304.512	12.077	292.664	593.415	915.777	1.261.304	1.631.660	2.028.629	2.289.931
INTEREST & PREFERRED DIVIDEND	2.240.402	4.399.568	4.173.921	3.932.060	3.672.818	3.394.948	3.097.111	2.777.871	2.435.691	2.068.922	1.675.797	1.254.423	802.769	318.660	0
DEPRECIATION	6.354.026	12.708.052	12.708.052	12.708.052	12.708.052	12.708.052	12.708.052	12.708.052	12.708.052	12.708.052	12.708.052	12.708.052	12.708.052	12.708.052	12.708.052
CHANGE IN WORKING CAPITAL [PRE-DIVIDENDS]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CHANGE IN WORKING CAPITAL [POST-DIVIDENDS]	0	-13	0	0	0	0	0	0	0	0	0	0	0	0	1.884.924
ADDITIONAL CASH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANNUAL INVESTMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL CASHFLOW FOR DSCR CALCULATION	**7.750.326**	**16.600.638**	**16.600.661**	**16.600.661**	**16.600.661**	**16.600.661**	**16.600.661**	**15.488.000**	**16.436.407**	**16.370.389**	**16.299.627**	**16.223.779**	**16.142.482**	**16.056.342**	**16.882.907**
TERM DEBT REPAYMENT	0	3.140.129	3.365.775	3.607.636	3.866.878	4.144.748	4.442.585	4.761.825	5.104.005	5.470.774	5.863.899	6.285.273	6.736.927	7.221.036	0
SHORT TERM DEBT REPAYMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SUB DEBT REPAYMENT / SHARE REDEMPTION	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INTEREST TERM LOAN(S)	2.240.402	4.399.568	4.173.921	3.932.060	3.672.818	3.394.948	3.097.111	2.777.871	2.435.691	2.068.922	1.675.797	1.254.423	802.769	318.660	0
INTEREST SUBORDINATED LOAN(S) / PREF DIVIDEND	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INTEREST SHORT TERM LOAN(S)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL DEBT SERVICE	**2.240.402**	**7.539.696**	**7.539.696**	**7.539.696**	**7.539.696**	**7.539.696**	**7.539.696**	**7.539.696**	**7.539.696**	**7.539.696**	**7.539.696**	**7.539.696**	**7.539.696**	**7.539.696**	**0**
DEBT SERVICE COVERAGE RATIO TERM DEBT	3,46	2,06	2,06	2,06	2,06	2,06	2,06	2,06	2,06	2,04	2,03	2,02	2,01	2,00	
DEBT SERVICE COVERAGE RATIO ALL DEBT	3,459	2,068	2,068	2,068	2,068	2,068	2,068	2,068	2,047	2,039	2,029	2,019	2,008	1,997	

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part III

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

EXAMPLE REGULATOR'S PERSPECTIVE

❖ But project might appear okay from regulator's point of view who take an LCOE approach:

		TOTAL	2015	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	2045	2046	2047	2048	2049
			0.00	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.00	14.00	15.00	16.00	17.00	18.00	19.00	20.00	21.00	22.00	23.00	24.00										
WACC	13.70%																																				
ELECTRICITY TO THE GRID	GWh	1,171.8						48.9	48.7	48.5	48.4	48.2	48.0	47.9	47.7	47.5	47.4	47.2	47.0	46.9	46.7	46.5	46.4	46.2	46.0	45.9	45.7	45.6	45.4	45.2	45.1	44.9	0.0	0.0	0.0	0.0	0.0
NET OF TAX PORTION	GWh	878.9						36.7	36.5	36.4	36.3	36.1	36.0	35.9	35.8	35.6	35.5	35.4	35.3	35.1	35.0	34.9	34.8	34.7	34.5	34.4	34.3	34.2	34.1	33.9	33.8	33.7	0.0	0.0	0.0	0.0	0.0
DISCOUNTED ELECTRICITY	GWh	285.7						36.7	32.1	28.2	24.7	21.6	19.0	16.6	14.6	12.8	11.2	9.8	8.6	7.5	6.6	5.8	5.1	4.4	3.9	3.4	3.0	2.6	2.3	2.0	1.8	1.5	0.0	0.0	0.0	0.0	0.0
VARIABLE COST		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FIXED COST		17.4						0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
EQUITY INVESTMENT		17.3	0.0	0.0	0.0	0.0	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOAN REPAYMENT		40.4						1.7	3.6	3.9	4.1	4.4	4.8	5.1	5.5	5.9	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INTEREST PAYMENT		14.7						2.1	2.6	2.4	2.1	1.8	1.5	1.1	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL COST		72.5						4.5	6.9	6.9	6.9	6.9	6.9	6.9	6.9	6.9	2.3	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.0	0.0	0.0
VARIABLE COST		0.0						0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FIXED COST		13.1						0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
EQUITY INVESTMENT		17.3	0.0	0.0	0.0	0.0	17.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LOAN REPAYMENT		40.4						1.7	3.6	3.9	4.1	4.4	4.8	5.1	5.5	5.9	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INTEREST PAYMENT		11.0						1.6	2.0	1.8	1.6	1.3	1.1	0.8	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DEPRECIATION		-14.4						-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	0.0	0.0	0.0	0.0	0.0
TOTAL COST		50.1						3.2	5.5	5.6	5.6	5.7	5.8	5.9	6.0	6.1	1.5	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0	0.0	0.0	0.0
DISCOUNTED COST		30.5						3.2	4.8	4.3	3.8	3.4	3.0	2.7	2.4	2.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
LCOE	MWh	106.7																																			
LCOE	kWh	0.107																																			

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

Content Part III

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.

A BALANCED APPROACH

- The triangle of the balance between equity, debt and regulatory interest is based on:
  - least cost approach: lowest tariff possible in local currency
  - longest debt tenors possible and lowest interest rates, preferably in local currency
  - sufficient levels of equity involved and reasonable returns predictions

- The Model can produce such common ground triangle. It contains for that purpose the necessary sensitivity – tables at the 'S'-sheet with full test-modalities on the functioning of the model in every sensitivity at the 'T' –sheet. (which would require review based on detailed generic assumptions).

SENS 30

Worst Case

	INDIVIDUAL SCENARIOS AT WORST CASE LEVEL			2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	TOTAL
				Cash Shortfall for Scheduled Senior Debt Service																						
1	DELAY ▲	3	MONTHS	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
2	PROJECT COST ▲	10%		0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
3	AVAILABILITY ▼	5%		0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
4	CAPACITY ▲	0	DAYS	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
5	O&M COST ▲	10%		0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
6	OTHER	10%		0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
7	OTHER	-4%		0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
8	OTHER	40%		0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
9	OTHER	5%		0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
10	COMBINED SCENARIOS																									0,00

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 818083.