INITIAL STRATEGIC ADVICE TO THE CONSORTIUM OF SLOVENIAN BUYERS EXPLORING INVOLVEMENT IN NEK 2

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TABLE OF CONTENTS

Definitions

The following definitions are used in this Advice:

BOO	Build Own Operate
BOOT	Build Own Operate Transfer
BWR	Boiling Water Reactor
CfD	Contract for Difference
Consortium	Pobuda JEK 2
DCO	Development Consent Order
DOE	Department of Energy of the USA
EC	European Commission
ECA	Export Credit Agency
EPC	Engineering, Procurement and Construction
EPR	European Pressurised Reactor
FID	Final Investment Decision
G2G	Government-to-Government
HPC	Hinkley Point C NPP
IGA	Inter-Governmental Agreement
LSTK	Lump Sum Turnkey
MW	Megawatt
Mwe	Megawatt Equivalent
NEK	Nuklearna elektrana Krško
NEK 2	New single-reactor nuclear power station to be built in Slovenia
NPP	Nuclear power plant

ONR	Office of Nuclear Regulation of the United Kingdom
PPA	Power purchase agreement i.e. an off-take agreement
Project	Project to finance and build NEK 2
RAB	Regulated asset base
RCF	Revolving credit facility
SZC	Sizewell C NPP
SMRs	Small Modular Reactors
UK	United Kingdom
USA	United States of America

A. BACKGROUND

1. This Advice was prepared at the request of the Društvo za razvoj skupnostne samooskrbe z električno energijo set up by a group of Slovenian companies. Pobuda JEK 2 will be set up by them (the "**Consortium**") to explore participating as investors and/or off-takers in the construction of a new single-reactor nuclear power station in Slovenia ("**NEK 2**") near the site of the existing nuclear power plant in Krško. The existing nuclear power plant ("**NPP**") is a 696 MWe Westinghouse PWR reactor unit which was constructed in 1981 and whose operating lifespan was extended recently until 2043.

2. GEN Energija d.o.o. is responsible for developing, financing and managing the project for the construction of NEK 2 (the "**Project**"). The Project is at present envisaged to add up between 1,100 MWe and 1,400 MWe of low-carbon baseload capacity to the grid, depending on the reactor technology ultimately chosen.

3. NEK 2 is a central element in Slovenia's strategic development plan and national energy and climate plan. The government is working at pace to take a Final Investment Decision ("**FID**") and commence construction by the end of 2027. A decision-in-principle was expected in 2023 but remains pending.

4. We have been advised by the Consortioum that the construction costs (also referred to as CAPEX) for NEK 2 are estimated at around EUR 7.5 bn and the total project costs, once financing costs are added, to EUR 9bn ("**Total Project Costs**").

B. OBJECTIVES OF THE CONSORTIUM AND THE PURPOSE OF THIS ADVICE

5. We understand that the Objectives of the Consortium are twofold:

   (i) Support the Project with a deliverable economic proposal to GEN Energija and the Slovenian government featuring several combinations of Consortium ownership, off-take, and related project support mechanisms; and,

   (ii) Support and engage the Slovenian government, and GEN Energija in its leadership of the Project, in order to secure a source of long-term and low-carbon baseload capacity.

6. We have been asked to prepare an initial strategic advice to the Consortium to enable it to explore the ways in which it may wish to participate and lend support to the Project (the "**Advice**"). **No legal advice has been provided**.

7. This Advice is presented in the following seven parts:

   A. Background;

   B. Objectives of the Consortium and Purpose of this Advice;

   C. Review of the existing and emerging models for financing nuclear new build projects;

   D. Assessment of the costs, risks and benefits of the various ways in which the Consortium may wish to participate in the Project;

   E. Project Risk Matrix - identifying the roles of key Project parties (whether technical, commercial or financial), and providing an analysis of key risks and appropriate mitigation strategies;

   F. Strawman qualitative scenario of the Consortium's potential involvement during the different phases of the Project; and

   G. Key recommendations.

C. EXISTING AND EMERGING FINANCING MODELS FOR NEW BUILD NUCLEAR POWER PROJECTS

8. This Section discusses the key features of seven different structures and financing models that have been deployed for new build nuclear power plants ("**NPPs**") as well as phased financing and refinancing in part 8. The seven models are listed in Figure 1.

Figure 1: Different models of financing new NPPs

MODEL DESCRIPTION	MODEL NAME	PROJECT NAME	ATTRIBUTES
1. BUYER-LED CORPORATE STRUCTURE	MANKALA	1.1 OLKIULOTO 1,2, & 3 NPPs (FINLAND)	Shared costs model – Coface ECA tranche (funded by international banks) + bi-lateral local bank financing + capital market issues…all procured by TVO on a Corporate Finance basis.
	FORWARD SALE AGREEMENT	***1.2 EXELTIUM (FRANCE)****	Consortium of French industrials buy fixed amount of power from Edf based on pre-agreed forward price for 24-years. Four French banks (CACIB, Natexis, BNPP and SocGen) underwrote initial Euros 1.7 bn financing.
2. HYBRID	GOVERNMENT MODEL: OFFTAKE WITHOUT OWNERSHIP	***2.1 HPC (UK) ****	• CfD Strike Price of BP 92.5/MWh agreed with Edf in 2013 for delivering an operating project. Cfd mitigates revenue risk for Edf who bears technical and construction risk.
		2.2 VOGTLE NPP (USA)	• Vogtle received US$ 10.0 billion in Loan Guarantees from US Department of Energy + Southern Company / Georgia Power corporate financing.
3. HYBRID	GOVERNMENT BACKED OWNER / OPERATOR WITH MARKET BUYERS	3.1 AKKUYU (TURKEY)	Rosatom provides one-shop service and agrees to take Turnkey responsibility for delivery completed plant, including financing, which is not easy to procure from non-Russian sources
4. HYBRID	*GOVERNMENT BACKED OPERATOR*	4.1 BARAKAH NPP (UAE)	• KEXIM tranche plus small local bank tranche + GAD balance sheet financing.
		4.2 DUKOVANY NPP (CZECHIA-PROPOSED) *	• ***Czechia Government is considering financing 70% of EUR 7.74 billion costs through State Loans with initial equity from CEZ of EUR 0.18 billion with subsequent equity from CEZ to be injected in stages.***
		4.3 SIZEWELL C NPP – REGULATED ASSET BASE (UK)	• RAB Model announced for SZC in 2019. HMG (51% owner) seeking private sector financing but unable to agree rate of return with investors demanding higher return (12%+ vs HMG reported offer of 9%) due to concerns about HMG delivery capabilities. RAB mitigates revenue risk for investors.
5. HYBRID	*GOVERNMENT TO GOVERNMENT*	***5.1 POLAND – PROPOSED** **5.2 CERNAVODA – PROPOSED (ROMANIA)*** ***5.3 BULGARIA – PROPOSED ****	IGA between Host Government and US Government that allows G2G interface on project development. Does not guarantee financing from USG Agencies such as USEXIM and DFC. Financing remains subject to satisfying borrowing conditions and meeting normal due diligence and information requirements.
6. OTHER FINANCING MODELS		6.1 KRŠKO NPP (SLOVENIA / CROATIA)	• Krško – an example of successful regional cooperation and equal risk sharing between Slovenia and Croatia. RAB-like structure.
		*6.2 VISAGINAS NPP (ESTONIA / LATVIA / LITHUANIA / STRATEGIC INVESTOR) – PROPOSED **	• Visaginas - an example of an aborted NPP projecthighlighting the complexity of multiple regional countries + Strategic Investor trying to develop a NPP. Mankala considered.

7. GOVERNMENT TO GOVERNMENT – STATE OWNED ENTERPRISES "ONE-STOP SHOP" STRUCTURE	7.1 G2G PROJECTS DEVELOPED BY RUSSIA	7.1.1 PAKS II NPP (HUNGARY)	• 2400MW (2x1200MW VVER reactors) to be developed by Rosatom under Build Own Operate and Transfer ("BOOT") model, launched in 1Q 2014 at an estimated cost of USD14.9 billion. The project is 80% financed by a Russian state loan with the remainder of the financing to come from the Hungarian government. The first unit expected to come on-line in 2025 and second unit by 2030. /
		7.1.2 OSTROVETS (BELARUS)	• 2400MW (2x1200MW VVER, AES-2006 units) being developed by Rosatom on a BOO basis at a cost of USD 13 billion with USD 10 billion financed by Russian ECA covering 90% of the costs and the remainder financed by Belarus government. First unit was connected to the grid in November 2020 and the second unit in May 2023.
		7.1.3 EL DAABA NPP (EGYPT)	• 4800MW (4x1200 VVER units) developed by Rosatom under a BOO contract signed in December 2016. The estimated cost of USD 30 billion is financed by a USD25 billion loan from the Russian government and the government of Egypt providing the remaining USD 5 billion.
		7.1.4 ROOPPUR NPP (BANGLADEESH)	• 2400MW (2x1200MW VVER units) will be built by Rosatom on a BOOT at project cost of USD 13.21 billion, 90% funded by a loan from the Russian Government and 10% by Government of Bangladesh
	7.2 G2G PROJECTS DEVELOPED BY CHINA	7.2.1 KARACHI 2/3 NPP (PAKISTAN)	• 2220 MW (2x1100 Hualong One HPR 1000 reactors) is to be built by China National Nuclear Corporation at an estimated cost of USD 7.93 billion. The project will be 82% financed by China EximBank and the remaining 18% will be financed by the Government of Pakistan

Source: Agias Advisory Limited

1. Buyer-led Corporate Structures (Mankala and Exeltium)

9. One financing model that incorporates a buyer-led structure, featuring both ownership and proportionate off-take stakes, is known as the Mankala Model. It is unique to Finland and has been deployed in the development of the country's nuclear power plants. The other example, deployed in France, is similar in that a group of French industrials (buyers) agreed to purchase a specific amount of electricity generated from EDF's NPPs, but have no ownership stake in any of the NPPs delivering the power nor in EDF. Each of the examples is discussed in turn below.

1.1 Mankala Model (Finland)

10. The Mankala Model is a unique business / financing model widely applied in the Finnish energy industry, whereby a non-listed, public limited liability corporation is run as a **"zero-profit" cooperative** for the benefit of its shareholders. The model enables a group of shareholders, who are often energy-intensive end-users, to jointly develop a large energy-infrastructure project that would otherwise be too big for any of them to develop on their own and then to purchase the power

produced at cost in proportion to the capital contributed by each shareholder.

11. This model has been successfully applied in Finland since 1969 with the creation of Teollisuuden Volma Oyj ("**TVO**"), one of Finland's largest power companies, with 3,650 Mwe in power generation capacity, 93% of which is derived from Olkiluoto1, Olkiluoto2 and Olkiluto3 NPPs. The main goal is to obtain long-term power at cost for high volume users of electricity.

1.1.1 Key elements of the TVO shareholder arrangement

12. Summarised below are the key elements of the TVO's shareholder arrangement:[1]

- Different classes of shares are issued that grant each shareholder rights to the output of TVO's different assets proportionally to a shareholder's stake in the TVO. The equity is proportionally contributed at the outset of a project / financing. Any subsequent equity to meet cost overruns is issued as needed until construction of the project is completed;

- TVO invoices fixed costs one month in advance, enhancing liquidity and minimising its working capital needs. Variable costs are invoiced monthly based on electricity consumed by each shareholder over the course of the month;

- TVO is a limited liability company, and its shareholders have no personal liability for the indebtedness of TVO and are severally responsible for the annual operating cost of the respective asset; and

- The shareholders are not liable for any costs other than those defined in the Articles of Association, unless otherwise agreed in writing. Only TVO has the right to call upon shareholders to pay for additional costs. In the event that a shareholder is unable to satisfy this call for additional costs, TVO has the right to sell the non-paying shareholder's electricity to another shareholder or to third parties at market price. Existing shareholders have a right of first refusal to buy available shares (and proportionate electricity off-take) that may be offered for sale before the shares are offered to third parties.

13. In Figure 2 below is a schematic presentation of the Mankala model.[2]

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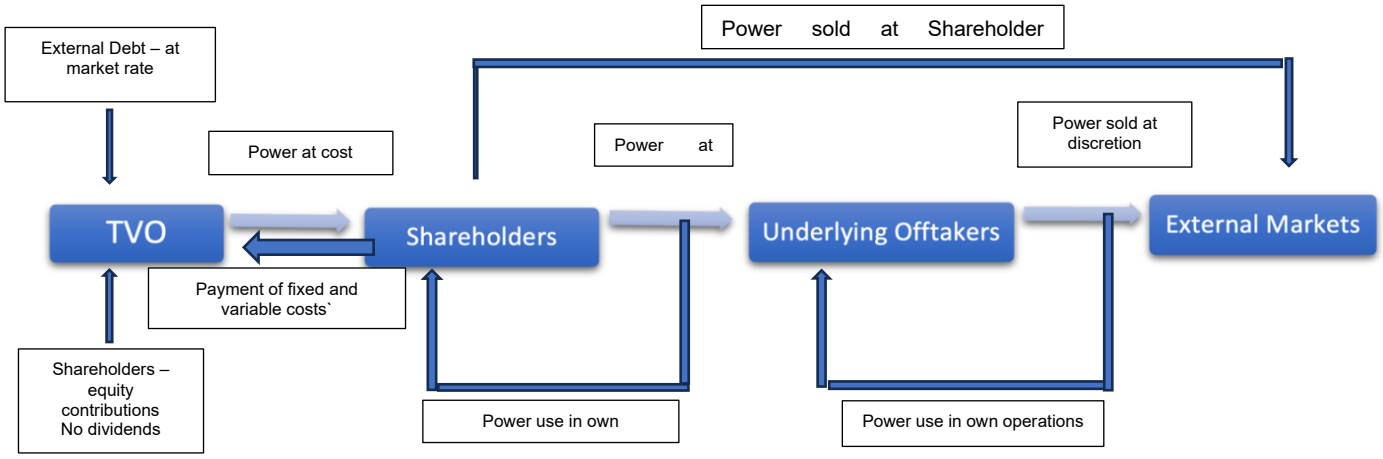
[1] TVO Creditor Investor Presentation, 31 December 2023, available at: https://www.tvo.fi/material/sites/tvo/pdft/zn6j53du8/TVO_-_Credit_Investor_Presentation_-_31_December_2023.pdf.

[2] Source: TVO.

Figure 2: Mankala Model



1.1.2 TVO Shareholding Details

14. TVO today has six shareholders, several of which are Mankala companies themselves (i.e., established on the "shared ownership principle" as "zero-profit" cooperatives). This means that, directly or indirectly, sixty energy companies, industrial companies and municipalities own TVO. TVO's six primary shareholders are listed below. Fortum and PVO together own approximately 84% of the TVO. The state of Finland holds 50.8% share in Fortum. The other four shareholders in TVO own the remaining 16%.

15. Listed below are the six shareholders:

- Pohjolan Voima Oyj ("**PVO**") – a Mankala company itself, which produces heat and electricity for its 21 shareholders which are mainly Finnish forest project and energy companies and municipalities;
- Fortum Power and Heat Oyj ("**Fortum**") – also a Mankala company, which produces electricity and heat from its fully owned Loviisa NPP and 560 MWe Meri Pori super critical coal fired plant, of which it owns 55%.
- Oy Mankala Ab – a hydropower company wholly-owned by the city of Helsinki;
- EPV Energyia Oy – operates as an energy supplier to municipality-owned distributions companies and smaller cities;
- Kemira Oy – a global chemical company serving customers in the water-sensitive industries; and

- Karhu Voima Oy – a small gas and electricity distribution company owned by municipalities of Kajaani and Sotkamo.[3]

16. The Figures 3 and 4 below depict respectively the TVO's shareholding structure and shareholding structure by sector.

Figure 3: TVO Shareholders

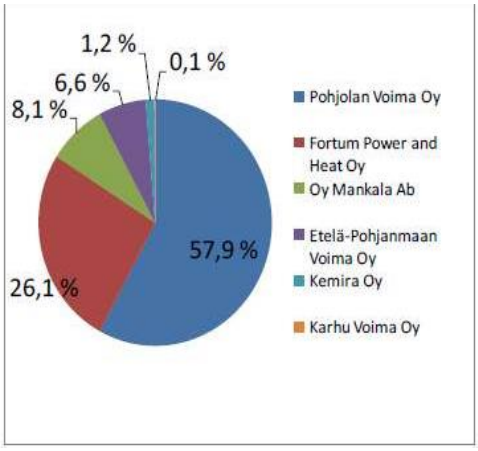
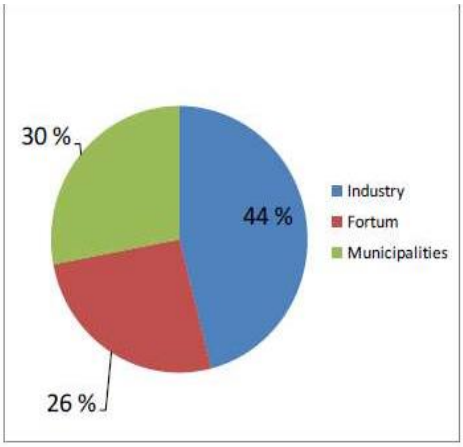


Figure 4: Shareholding Structure by Sector



Source: Lauri Piekkari – Senior VP and Treasurer, TVO[4]

1.1.3 Description of the Projects

17. To date NPPs developed and completed by TVO using the Mankala Model include:

(i) Olkiluoto 1 – 880 MWe Boiling Water Reactor ("**BWR**") technology connected to the Finnish electricity grid in 1978;

(ii) Olkiluoto 2 – 880 MWe BWR technology connected to the Finnish electricity grid in 1980; and

(iii) Olkiluoto 3 ("**OL3**") – 1600 MWe European Pressurised Reactor ("**EPR**") reactor which was connected to the Finnish electricity grid in April 2023.

18. In this Advice, we only discuss the OL3 Project's structure and financing approach, as the older projects were developed more than forty years ago and are not relevant comparisons today.

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[3] Ibid.

[4] Lauri Piekkari – Senior VP and Treasurer, TVO, Workshop on Economics and Financing of Nuclear Power, February 11, 2009 (Vienna, Austria).

19. OL3 was nearly 14 years late and cost of EUR 11 billion, more than three times the original “overnight” EUR 3.2 billion Lump Sum Turnkey (“**LSTK**”) cost estimate provided by the Areva-Siemens consortium in 2003.

20. In 2003, TVO was confident that the world class Areva-Siemens consortium would be able to deliver the project on a LSTK basis. The delays in completing OL3 and attendant cost increases primarily attributed to the complexity and first-of-a-kind nature of the EPR reactor design and the heightened focus on safety post-Fukushima which prompted the Finnish Regulator to require significant improvements in safety-related design features. TVO felt that any cost overruns were solely the responsibility of the contractor and was unwilling to fund even a share of any incremental costs, arguing it was only contractually required to fund its equity obligation and nothing else as is typical in an LSTK agreement.

21. The subsequent disagreement between TVO and Areva-Siemens resulted in protracted arbitration proceedings. The outcomes of the proceedings are confidential, but they offer a general lesson for the Consortium when exploring the ways to support and be involved in the construction of NEK 2. **Any model, despite its attractiveness on paper, can confront serious implementation issues. Although written contracts seek to assign responsibility for difficult outcomes like cost overruns and delays, they cannot stop severe, unexpected events from triggering legal disputes. The risks of such disputes and the liability arising in respect of the construction of NEK 2 should be considered by the Consortium when exploring ways to get involved in the Project.**

22. It is also important to recognise that contractual remedies never fully protect the owner when a project is significantly late. In the instance of OL3, the shareholders of TVO were motivated to acquire electricity at cost, starting in 2009. With delays of over a decade, the contractual remedies (delay liquidated damages) were exhausted very quickly; consequently, the owners suffered despite the LSTK structure and the presence of contractual remedies – in short, when a megaproject goes very poorly, everyone loses.

23. The main lessons for the Consortium from OL3 is that an LSTK EPC structure does not fully protect the ownership group when a megaproject goes very badly. Another important lesson is that western, non-state owned companies will not offer LSTK EPC contracts at any point in the near term.

1.1.4 Description of Financing Structure[5]

24. TVO financed OL3 on a corporate finance basis. At the onset, TVO contributed a portion of equity and then secured external financing from several different sources sufficient to fund the start of construction. As construction proceeded, TVO then took advantage of the "sweet spots" on the yield curve to procure the required funding for the next stage of the project. That is, it identified the durations of loans that had the most attractive interest rates at different stages of the construction and operation of the plant as follows:

Phase 1 – EUR 3.27 billion (December 2003)

- EUR 1.9 billion Revolving Credit Facility ("**RCF**") subscribed by Bayerische Landesbank, BNP Paribas, JP Morgan, Nordea & Svenska Handelsbanken (58%)

- EUR 655 million Shareholder Equity (20%)

- EUR 164 million Subordinated Shareholder Loan (5%)

- EUR 557 million Bilateral Loans from several Nordic institutions with EUR 100 million from AB Svensk Esportkredit (SEK - Swedish State ECA) (17%)

Phase 1a – EUR 587 million (March 2004)

- EUR 587 million Export Credit Agency ("**ECA**") Facility from Coface (French ECA - now BPI France). Subscribed to by same banks in the RCF listed above and used to reduce a commensurate amount of the more expensive and shorter-tenored RCF

Phase 1b - EUR 1.6 billion (March 2005)

- New EUR 1.6 billion RCF subscribed to by a group of different international and Nordic commercial banks to entirely refinance the remainder of the more expensive original 2003 RCF

Phase 2 – Ongoing Recapitalisation efforts aimed to take advantage of favourable market conditions with following targets:

- Reducing RCF borrowings

- Reducing Bilateral Loans to 10% of TVO's capital structure

[5] Ibid.

- Reduce ECA Facility to 10%

- In December 2023, TVO issued EUR 587 million private placement of green notes under its Green Bond Framework set up in July 2023[6]

1.1.5 Relevance in the Slovenian Context

25. **The Mankala Model could form part of a "Hybrid Model" that would enable the Consortium to secure a long-term, fixed price supply of low carbon energy in proportion to their investment in return for the Consortium funding their equity contributions up front and taking development risk and providing a pro rata backstop for any cost overruns.**

26. **From GEN Energija's perspective, this model could provide a secure source of funding at an early stage of the project lifecycle when funds are most needed. The "Mankala Tranche" could be woven into the overall project / financing structure that could include other financing sources, such as bank loans, corporate bonds, ECA direct loans / insurance cover, and Slovenian government loans and guarantees.**

27. **The Consortium needs to be prepared for the "at cost" discussion, relative to the EPC/project delivery contract. Note that the OL3 EPC contract was LSTK; under other models, the final cost (and, thus, "at cost" electricity price) will be more of a variable number**.

1.2 Exeltium Buyer Model (France)

28. In 2008, a year after the start of the construction of the Flamanville NPP, EDF entered into the Exeltium transaction with a group of 27 (now 25) French energy-intensive industrial companies listed below to purchase a fixed amount of electricity at an agreed price for 24-years. The transaction can best be described as a "Forward Sale Agreement".

29. Due to the corporate financing nature of the transaction, there was no stipulation

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[6] *TVO joins green bond market as the first European nuclear power company*, TVO website, December 12, 2023, available at: https://www.tvo.fi/en/index/news/pressreleasesstockexchangereleases/2023/4705695.html#:~:text=TVO%20joins%20green%20bond%20market%20as%20the%20first%20European%20nuclear%20power%20company,-18.12.2023&text=On%20Friday%2015%20December%202023,in%20the%20summer%20of%202023.

in the financing agreements requiring EDF to use the funds exclusively for the construction of Flamanville NPP, but it is generally understood that these funds were deployed for that purpose. A point of note is that as at March 2024 the Flamanville NPP has yet to reach commercial operations.[7]

1.2.1 Description of the Financing Structure

30. The consortium of French electro-intensive industrial companies included: Ahlstrom Munksjo, ArcelorMittal, Air Liquide, Arkema, ArjoWiggins, Eni, Ineos, Linde, Solvay, Rio Tinto and TotalEnergies. These companies set up Exeltium as a limited liability company for the purposes of this transaction.

31. Pursuant to the Exeltium transaction, EDF agreed to deliver a contracted amount of electricity for a fixed price over a period of 24 years in return for an upfront payment of EUR 4 billion and an annually indexed variable price proportional to the operating costs of the EDF's nuclear power plants.

32. The group of companies that formed Exeltium did not take an equity investment in any of EDF's nuclear new-build projects and acted solely as off-takers for their proportional share of electricity to be delivered by EDF from its existing portfolio of nuclear generating assets.

33. The negotiations to finalise the Exeltium transaction took almost 5 years and were impacted by two major factors. First, the delay in securing the European Commission's ("**EC**") approval because the resale restrictions in the original contract signed between EDF and Exeltium were deemed "anti-competitive." The EC also expressed concern that these agreements foreclosed the French electricity market, limiting access for new electricity suppliers.[8] Pursuant to the transaction, 311 TWh of electricity will be supplied from 2010 until 2034. The second factor in the delay was the onset of the financial crisis in the autumn of 2008 and subsequent credit crunch which made it difficult for the Exeltium companies to procure the Euro 4 billion upfront payment.

34. Consequently, the project and payment structures were split in two phases:[9]

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[7] *EDF announces new delay for Flamanville EPR reactor*, Reuters, 16 December 20222, available at: https://www.reuters.com/business/energy/edf-announces-new-delay-flamanville-epr-reactor-2022-12-16/.

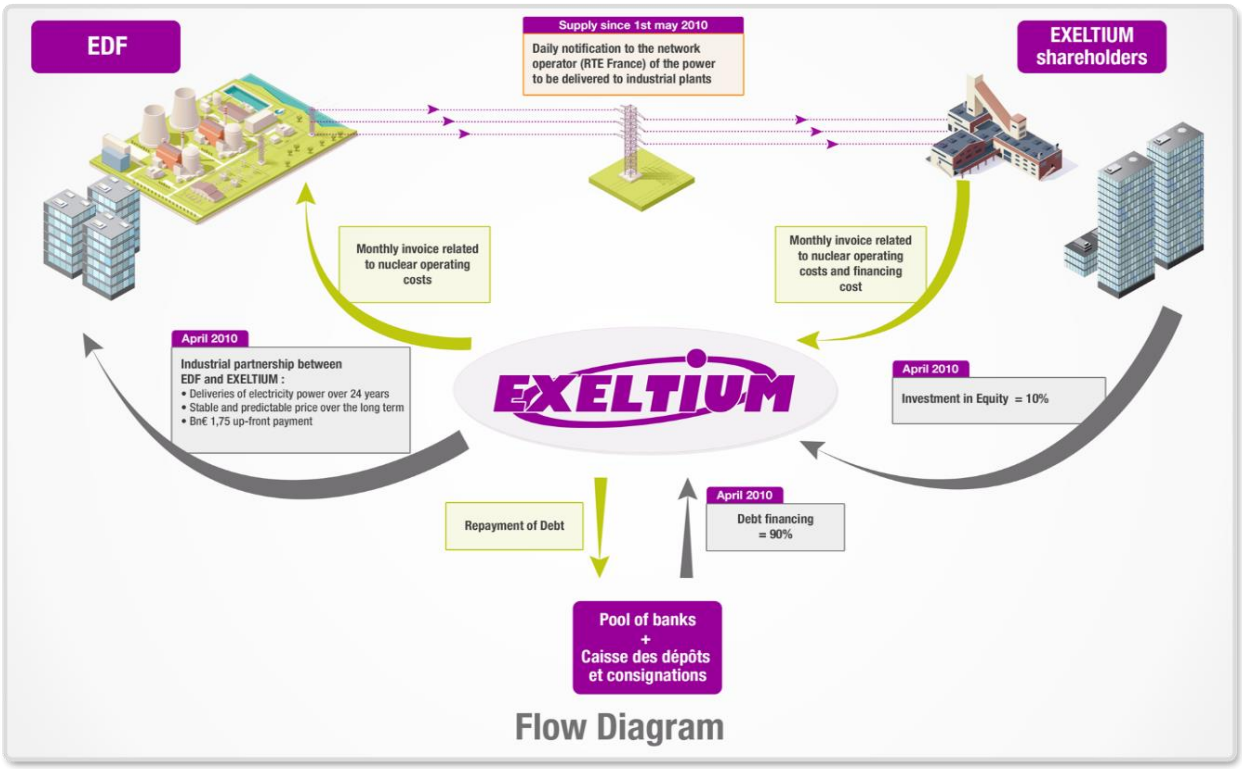
[8] Nikki Tait, *Brussels welcomes EDF move on supply agreements*, Financial Times, August 1, 2008, available at: https://www.ft.com/content/96ec6aba-5fcd-11dd-805e-000077b07658.

[9] Exeltium project website available at: https://www.exeltium.com/project/?lang=en#enhance-visibility-electro-intensive-industry.

- Phase 1 (2010): delivery of 148 TWh over 24 years for an up-front payment of EUR1.75 billion which was fully equally underwritten by BNP Paribas, Credit Agricole, Natixis and Societe Generale[10]; and

- Phase 2 (2011): delivery of the remaining 163 TWh over the same 24-year term upon payment of the remaining EUR 2.25 billion.[11]

Figure 5: Diagram of the Exeltium Transaction[12]



1.2.2 Relevance in the Slovenian Context

35. **The Exeltium structure could be relevant in the Slovenian context as GEN Energija has electricity capacity available for sale to the Consortium at present. Purchasing this electricity would allow the Consortium to satisfy its goal of securing low carbon electricity in the near term while providing capital for the development, financing and construction of NEK 2**.

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[10] IJG Global, 03 November 2010, available at: https://www.ijglobal.com/articles/119106/nuclear-drop-out.

[11] The actual price of the power delivered was never disclosed as proprietary to EDF.

[12] Exeltium project website available at: https://www.exeltium.com/project/?lang=en#enhance-visibility-electro-intensive-industry.

2. Hybrid Government Model: Off-take Without Ownership Stakes

36. This Section summarises the key features of buyer-supported financing models for new build NPPs. Under this model the end users ultimately pay for the power and are also responsible for any increase in costs (which is reflected in a corresponding increase in the cost of electricity) due to project delays and cost overruns.

2.1 Hinkley Point C (United Kingdom)

2.1.1 Description of the Project

37. The CfD mechanism was developed by the United Kingdom ("**UK**") as a means to finance the construction of Hinkley Point C ("**HPC**"), a 3200 Mwe, 2-unit NPP being developed jointly by EDF (France) and CGN (China). It is worth noting that CGN's participation was solicited because (i) neither the UK government nor EDF were able to commit sufficient funds to the project, (ii) of EDF's prior relationship with CGN on the Taishan NPP (2x1660 Mwe EPR units commissioned in 2018 and 2019 respectively) in China and favourable geopolitics at the time (which have dramatically changed in subsequent years), and (iii) of China's interest in getting its Hualong One reactor certified by ONR and deployed in the UK. CGN agreed to enter the project in return for ownership stakes in Sizewell C and the Bradwell B site for the deployment of its Hualong One reactor.

38. Construction began in 2017. Originally EDF's estimated the cost of the NPP at GBP 20.5 billion. In January 2024 EDF announced that the project will cost between GBP 31 billion and 34 billion and is now expected to be finished by 2035.[13]

2.1.2 Project Developers

39. Nuclear New Build Generation Company ("**NNB**"), the subsidiary created by EDF, is the Project Developer and the expected operator of HPC. It is an English limited liability company owned 66.6% by EDF and 33.3% by CGN.

[13] Alex Lawson, *Hinkley Point C could be delayed to 2031 and cost up to £35bn, says EDF*, The Guardian, 23 January 2024, available at:https://www.theguardian.com/business/2024/jan/23/hinkley-point-c-could-be-delayed-to-2031-and-cost-up-to-35bn-says-EDF.

2.1.3 Description of Financing Structure

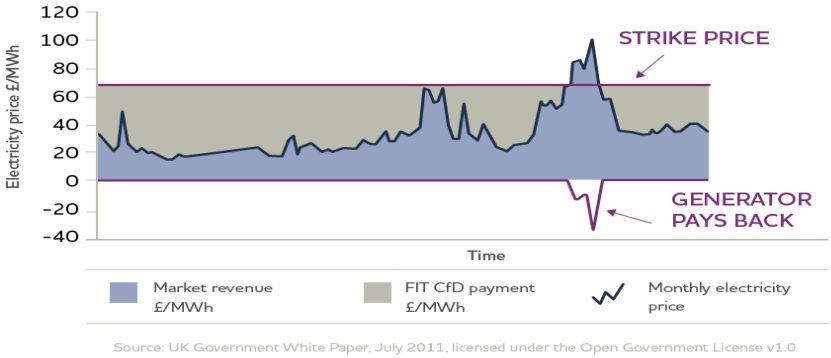
40. The initial proposal was to use debt financing for almost half of the costs relating to construction of HPC. The UK government proposed guaranteeing the loans, but EDF rejected this proposal on account of the high costs and onerous project milestones. Even prior to incurring cost overruns the project was not attractive to large industrial customers, given the relatively low costs of generation by alternative sources. Since the Mankala model and the Exeltium model were not possible the UK government stepped in to support the project by offering a premium relative to electricity market prices. UK support ensured a stable and secure source of income to HPC from the sale of electricity. Nevertheless, the project is ultimately an all-equity structure.

41. The government offered its support through a "Contract for Differences" ("**CfD**"). The CfD mechanism obtained EC's state aid approval on 8 October 2014.[14] Pursuant to the mechanism, HPC is guaranteed a stable source of revenue for a period of 35 years. The CfD was entered into between NNB, and the UK's Low Carbon Contracts Company ("**LCCC**"), a UK state-owned company, pursuant to which a strike price of GBP 92.5/MWh was guaranteed in respect of all the electricity generated by the NNB.

42. As shown in Figure 6, the CfD mechanism operates as a "two-way financial hedge" based on the difference between the agreed strike price and the market price, so that if the market price is lower than the strike price, the mechanism allows for the difference to be paid to NNB. Conversely, if the market price is higher than the strike price, the difference is paid to LCCC. At the time the CfD was concluded, the wholesale price of electricity was GBP 40. Accordingly, there were many who questioned whether the arrangement provided good value for money for the UK taxpayers ultimately footing the bill. However, in today's high energy price environment and the emphasis placed on ensuring energy security, the agreed strike price is seen as a good deal for the UK taxpayers.

[14] State Aid Decision SA.34947 United Kingdom - Support to Hinkley Point C Nuclear Power Station, dated January 13, 2015, published in JOCE L/109/2015 dated 28.04.2015 available at: https://competition-cases.ec.europa.eu/cases/SA.34947. EC's state aid approval was challenged in the Court of Justice of the EU by Austria. The challenge was unsuccessful.

Figure 6: Diagram of the CfD Model



Source: UK Government White Paper, July 2011, licensed under the Open Government License v1.0

43. The CfD structure places the onus on delivering the project solely on NNB as owner, with the strike price only payable once the construction is completed and the plant starts generating electricity. Although the model had been successfully used in the UK to enable private developers to secure financing for solar and wind projects, it proved to have major shortcomings for financing nuclear projects. Since it only guarantees the project developers income once the NPP is in operation, the cost of financing during the pre-construction and construction phases, which can span 10 years or more, remain high, putting significant pressure on the project developer and considerably increasing the overall cost of the project. This is one of the main reasons why the RAB model (discussed below) has now been adopted by the UK to finance the construction of Sizewell C.

2.1.4 Relevance in the Slovenian Context

44. **A CfD approach could be considered in the Slovenian context. However, UK's experience has shown that developers / owners might not see the CfD structure and the strike price offered as adequate for covering development and construction costs and associated risks and delivering a completed and operational project. Thus, the CfD approach may be insufficient unless supplemented by further funding commitments by the host government regarding future cost overruns**.

2.2 Vogtle 3 and 4 NPP (United States of America)

45. In 2005 the government of United States of America ("**USA**") passed the Energy Policy Act in order to spur investment in nuclear new build projects. Among other things, the legislation provided:

- Loan guarantees for nuclear power projects;
- Tax incentives; and
- Standby support for regulatory matters (USD 2 billion in support per NPP in case of delays caused by changes to the regulatory environment).[15]

2.2.1 Description of the Project

46. The 2,234 MW Vogtle expansion project was initiated by Georgia Power, a subsidiary of Southern Company, in collaboration with other utility partners. It aimed to expand the existing Vogtle facility by adding two new nuclear reactors (Units 3 and 4 of 1,117 MW each) in order to increase energy production capacity and support the growing energy needs of Georgia and the south-eastern USA. Units 3 and 4 were designed to utilise AP1000 reactor technology.

47. The construction of Units 3 and 4 began in 2013 after receiving regulatory approvals and permits. However, the project faced numerous challenges, including delays and cost overruns attributed to regulatory issues, supply chain disruptions, and construction complexities. These challenges led to significant schedule delays and increased costs compared to initial projections.

2.2.2 Project Developer

48. Georgia Power, a subsidiary of Southern Company, in collaboration with other utility partners, is the Project Developer. Southern Company is a regulated US utility. The regulated market structure allows for cost overruns to be passed through to the taxpayers, subject to prudency reviews by the state's Public Utility Commission.

2.2.3 Description of Financing Structure

49. The Vogtle expansion project is one of the largest infrastructure projects in the USA. The estimated cost of completing Units 3 and 4 ballooned significantly since the project's inception, with estimates surpassing the initial budget by billions of dollars.

50. Financing for the project has involved a mix of equity investments from the utility

[15] Energy Policy Act of 2005, Public Law No: 109-58, dated August8, 2005, available at: https://www.congress.gov/bill/109th-congress/house-bill/6#:~:text=Energy%20Policy%20Act%20of%202005%20%2D%20Sets%20forth%20an%20energy%20research,electricity%3B%20(10)%20energy%20tax.

partners, federal loan guarantees, and rate increases approved by the Georgia Public Service Commission.

51. In June 2010, the Department of Energy ("**DOE**") awarded Georgia Power conditional loan guarantees of USD $8.33 billion,[18] to cover around 60% of the then estimated USD14 billion for the total construction of Vogtle 3 and 4.[16]

52. The expectations were that the DOE funding guarantees would catalyse private sector financing and enable the project to be completed at no cost to the US taxpayer. However, delays and cost overruns have caused the total cost of the project to balloon to USD 32 billion in late 2021. The DOE's loan was increased by USD 3.7 billion, to a total of USD 12 billion in 2019.[17]

2.2.4 Relevance in Slovenian Context

53. **We understand that GEN Energija is considering funding NEK 2 through loans backed by state guarantees and corporate bonds. The proposed financing structure is similar to what has been used in the USA with a combination of loan guarantees from DOE, corporate finance and equity contributions from Georgia Power and other shareholders**.

54. **The primary difference is that in the US case the equity providers and borrowers are private sector entities instead of state-owned entities like GEN Energija; however, it is also noteworthy that the project is in a regulated market, such that cost overruns can be passed through to the taxpayers**.

55. **We believe that combining attributes of one or several models in the creation a "Hybrid Model" needs to be the objective during discussions between the Consortium, GEN Energija and the Slovenian government**.

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[16] David Schlissel, Southern Company's Troubled Vogtle Nuclear Project, Institute for Energy Economics and Financial Analysis, January 2022, available at: https://www.powermag.com/wp-content/uploads/2022/01/southern-companys-troubled-vogtle-nuclear-project-january-2022.pdf.

[17] Department of Energy, Loan Programs Office, How the Loan Programs Office and Plant Vogtle are Shaping the Energy Transition through Nuclear Technology | Department of Energy.

3. Hybrid Structure - Government backed owner-operator with market buyers

3.1 Akkuyu NPP Project (Turkey)

56. The Akkuyu NPP Project in an example of this type of hybrid financing structure.

3.1.1 Description of the Project

57. The Akkuyu NPP consists of 4x1200 VVER reactors. It will be the largest power plant in Turkey. The plant is being built under a build, own and operate ("**BOO**") model by Rosenergoatom, a subsidiary of Russia's Rosatom. Rosatom is also the 93% shareholder (the remaining 7% being held by other Russian interests) and has provided the bulk of the financing to fund construction and development to date. State-owned company Elektrik Uretim ("**EUAS**") provided the site required for the four reactors.[18]

58. The Akkuyu NPP is being developed since 2010 under the aegis of an Inter-Governmental Agreement ("**IGA**") between Turkey and Russia.

59. The total cost of the project was agreed not to exceed USD 20.8 billion with a payback period of approximately 19 years, while the operation period is expected to stretch to 60 years.

60. Construction on Unit 1 commenced in 2013 followed by construction on the remaining three units. The target date for Unit 1 to generate first power is slated for year-end 2024. Construction is ongoing for the remaining units.

3.1.2 Project Developer and Project Sponsor

61. In December 2010, Rosatom established the Akkuyu Electricity Generation JSC as the Project Developer. Its shareholders besides Rosatom (74.915%) also include numerous Russian companies, including, JSC Atomstroyexport (2.267%), JSC Concern Rosenergoatom (21.948%), Atomenergoremont (0.025%) and Atomtekhenergo (0.025), and JSC Inter Rao Ees (0.8207%).[19]

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[18] Akku Nuclear Rosatom, available at: https://akkuyu.com/en/about/history.

[19] Shares were as of October 2020; Akkuyu Nuclear had just approved the termination of RAO's involvement; we do not know the buyer. See Nuclear Engineering International, Russia's Inter Rao sells stake in Akkuyu Nuclear as training and construction progress (18 February 2021).

3.1.3 Description of Financing Structure

62. The bulk of the financing for the project was provided by Rosatom's subsidiary, Rosenergoatom, which started out with a 93% share in the Akkuyu Electricity Generation JSC. Rosatom's initial intention was to reduce its stake over time, offering foreign investors the opportunity to own up to 49% of Akkuyu.[20] Having failed to find any foreign investors the latest reports indicate Rosatom's ownership stake to be currently at 99.2%.[21]

63. As part of the financing, an off-take agreement was entered into between Turkish state-owned Turkish Electricity Trade and Contract Corporation ("**TETAS**") and Akkuyu Electricity Generation JSC pursuant to which 50% of the output of the Akkuyu NPP (70% of output from Units 1&2; and, 30% from Units 3&4) was to be bought by TETAS at a price of USD 12.35¢/kWh under a 15-year off-take agreement. The remaining 50% of the power was to be sold in the open market by Akkuyu Electricity General JSC.

64. No guarantees were given by Turkey to finance the project but for the guarantees given through the off-take agreement. The state's largest power generation company EUAS has since taken over from TETAS as the counterparty to the off-take agreement. For many years there have been plans to privatise EUAS but the most recent discussions have postponed its privatisation to 2025. All risks of cost overruns and schedule delays are borne by Akkuyu Electricity General JSC.

3.1.4 Relevance in the Slovenian Context

65. **The BOO model is not relevant in the Slovenian context. Given the current geo-political situation it is likely that Rosatom is not a viable partner for Slovenia, and no other nuclear companies offer the BOO model. It is also noteworthy that Rosatom has not replicated the BOO model in other jurisdictions**.

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[20] *Akkuyu Nuclear Power Plant, Mersin,* Power Technology, February 1 2016, available at: https://www.power-technology.com/projects/akkuyu.

[21] *Akkuyu construction to be completed by 2026, says project CEO*, World nuclear news, 10 February 2021, available at https://www.world-nuclear-news.org/Articles/Akkuyu-fully-operational-by-2026,-says-project.

4. Hybrid Structure – Government Backed Operator

66. In this Section, we describe 3 government support mechanisms for financing new NPPs. It is important to note that governments are increasingly reluctant to take on the burden of financing the build out of a nuclear new-build programs, or even singular projects. The exceptions are countries with substantial financial reserves and strong investment-grade credit ratings which enable them to absorb high front-end costs as well as contingent obligations that come with developing nuclear new-build projects or programs. The Barakah NPP project discussed below is the only example of a state taking a majority equity stake as well as providing significant sovereign financing to fund the construction of an NPP.

4.1 Barakah NPP (Abu Dhabi)

4.1.1 Description of the Project

67. The Barakah NPP consists of four KEPCO APR 1400 MW units. It is a recent example of a government financed project. Construction started in 2012 and the fourth reactor will be connected to the UAE electricity grid in the coming weeks. The project was initially estimated to cost USD 20 billion when awarded to KHNP (Korea) in 2009. The current cost estimates are estimated at between USD 24 and USD 30 billion.

4.1.2 Project Developer

68. The Project Developer is Emirates Nuclear Energy Corporation ("**ENEC**"), wholly owned by the government of Abu Dhabi ("**GAD**"). Ultimately, the project involved a split owner (Barakah One) and operator (Nawah Energy) structure. ENEC holds an 82% share in both Barakah One and Nawah Energy, and KEPCO holds an 18% share in both. It is also noteworthy that KEPCO is majority-owned by the Korean Government.

4.1.3 Description of the Financing Structure

69. The Barakkah NPP project was funded primarily on GAD's balance sheet. USD 2.5 billion was secured from the Export-Import Bank of Korea ("**KEXIM**") and USD 250 million from a consortium of local and international banks which included the National Bank of Abu Dhabi, First Gulf Bank, HSBC and Standard Chartered).

70. The original project financing structure contemplated in 2009 included a much

larger KEXIM loan (reportedly USD 10 billion), an approximately USD 2 billion loan from US-EXIM and a small local bank financing tranche.

71. Since a typical ECA loan for nuclear projects has a long tenor (7-year construction period plus 22-year repayment period but not to exceed 29 years from the date of the initial debt draw-down) and includes costly upfront premiums this significantly increases the overall financing cost of the project. This prompted GAD to opt to use its own funds and abandon the multi-source debt financing route.

72. In addition to reducing the overall cost of financing, the majority government-funded structure also allowed GAD to maintain optimal control of a critically strategic energy infrastructure asset. Initially, ENEC wished to pursue a quasi-project finance structure, but in the end the project was primarily financed by the GAD's Ministry of Finance.

73. It should be borne in mind that in project finance structures lenders require a significant amount of "control" over every aspect of the construction and operation of an NPP as it is the only source of payback. Such control is evidenced by a strict covenant structure, claims on all the project's physical assets and bank accounts and hair trigger default clauses. In addition, project finance lenders require "step-in" rights that allow them to replace an EPC contractor or an operator in order to ensure the timely completion of construction or good plant operation. Given the high level of skilled personnel required to operate a NPP, any interference by lenders in the exercise of their "step-in" rights in the case of a default is strongly resisted by project developers. This is one of the primary reasons why to date, **no NPP new build has been financed on a project finance basis**.

74. In the Barakah NPP case, GAD opted to fund the majority of the cost on its balance sheet instead of ceding "control" which the project finance lenders would have required. It did so despite GAD's legacy of deploying project finance to fund its highly successful IPP and IWPP program that added about 16 GWe of power generation and about 1000 MIGD of water desalination capacity in the Emirate between 1999 and 2019.[22]

[22] *Abu Dhabi Department of Energy Issues '2020 Annual Technical Report for the Water, Wastewater, and Electricity Sectors in the Emirate of Abu Dhabi,* Department of energy, Dec 29,2021, available at:https://doe.gov.ae/Media-Centre/News/Abu-Dhabi-Department-of-Energy-Issues-2020-Annual#:~:text=Abu%20Dhabi%27s%20energy%20sector%20has,electricity%20generated%20was%2084%2C740%20GWh.

4.1.4 Relevance in the Slovenian Context

75. ***It appears that Slovenian government is considering a supporting structure closely resembling Barakah NPP structure. However, the KEPCO ownership portion is where the model deviates, as does the relative financial strength of the UAE relative to Slovenia.***

4.2 Dukovany NPP (Czechia)

4.2.1 Description of the Project

76. After the project to construct two new reactors at Temelín, totalling up to 3400 MWe, was aborted in 2014 due to the refusal of the state to provide any future price guarantees in the form of CfD or similar support structures, Czechia adopted the Act on Measures for the Transition of Czechia to a Low-carbon Energy Sector ("**LCA**") on 1 October 2021. The LCA set the framework for the construction and operation after 2030 of nuclear power plants above 100 MW in Czechia.

77. ČEZ is currently in discussions with France's EDF and South Korean's KHNP to receive binding bids for up to two nuclear blocks at the existing Dukovany site and up to two at the Temelín site. According to Czech Prime Minister: "The tendering process so far shows that supplying multiple reactors simultaneously could provide us with a price reduction of up to one-quarter for a single reactor. We have therefore decided to ask bidders to submit binding offers for the supply of up to four new nuclear reactors".[23]

78. We understand that the Westinghouse bid was excluded in January 2024 for the failure to identify the entity responsible for the quality of the work and as it was not binding. KNHP and EDF now have until 15 April to submit new bids, which will be assessed by ČEZ, which itself must submit the evaluation of the bids for the four units to the government by the end of May. The tender's winner is set to be confirmed by mid-2024. The first planned unit is expected to be completed in 2036, and the others in stages by 2050.

79. In 2022, the total funding requirement of the single unit project was estimated at EUR 7.74 billion in nominal terms. It was to be financed via EUR 0.18 billion initial equity from ČEZ in the pre-construction phases and by a EUR 7.56 billion State

[23] Aneta Zachová, *Czechia expands nuclear tender to four units, excludes US' Westinghouse, Euractiv*, February 2, 2024, available at: https://www.euractiv.com/section/politics/news/czechia-expands-nuclear-tender-to-four-units-excludes-us-westinghouse/.

loan.[24]

80. An additional EUR 1.77 billion for the first unit was committed as contingent equity by ČEZ to finance any potential cost overruns not caused by legitimate grounds. The details on the approach for financing of any cost overrun was to be agreed by ČEZ and the Czechia once the EPC contract was signed. The total maximum equity commitment from ČEZ for the Project in the development and construction phase was set at EUR 1.95 billion for the first unit.

81. The environmental impact assessment, including the cross-border consultation, was concluded in 2019,[25] and EDU II (defined below) obtained license for the siting of the nuclear installation in March 2021.

4.2.2 Project Developer and Project Sponsor

82. ČEZ is the Project Sponsor and is expected to be in charge of the strategic control and oversight of the project. A separate legal entity, which is fully owned subsidiary of ČEZ, will implement the project.

83. ČEZ is seventy percent owned by the Czech state. ČEZ is the owner and operator of all 6 NPPs currently operating in Czechia. They are located at Dukovany and Temelín. The existing NPPs were built in the late 1970s and early 1980s using Russian reactor design. ČEZ is the largest utility and biggest public company in Central and Eastern Europe.

4.2.3 Description of the Financing Structure

84. Below we describe the financing structure for a new nuclear power plant at Dukovany site, Czechia, with a capacity of between 850MV to 1200 MW (the "**CZ Project**"), as was notified to the EC in 2022, albeit the structure was not approved by the EC ("**Commission Decision**").[26] Having spoken to ČEZ on 18 March 2024, we understand that this structure forms the basis of the financing structure currently being discussed among the EC, the Czechia government and ČEZ for the Dukovany NPP unit. The negotiations are expected to be concluded in the coming month or so.

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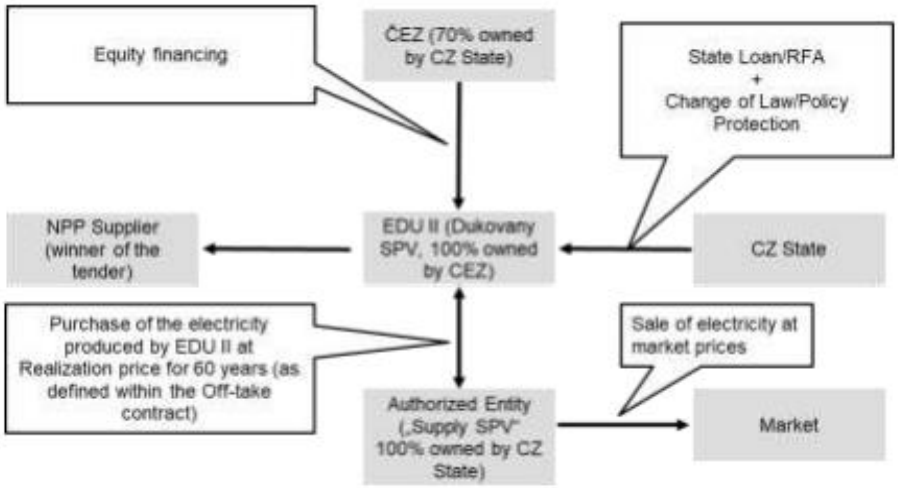
[24] As per our discussions on 18 March, ČEZ's current estimate for the project is Euro 10 billion.

[25] *Projects situated in the Czech territory*, EIA Information System, available at: https://portal.cenia.cz/eiasea/detail/EIA_MZP469?lang=en.

[26] *State Aid Decision SA.58207 (2021/N)* – Czechia - Support for the construction and operation of a new nuclear power plant at the Dukovany site, dated June 30, 2022, available at: https://ec.europa.eu/competition/state_aid/cases1/202249/SA_58207_0010CD84-0000-C7E0-A425-6311047577E0_272_1.pdf.

85. As the Figure 7 shows, under the proposed structure, ČEZ has set up an 100% owned SPV Elektrárna Dukovany II a.s ("**EDU II**") for the purposes of the construction and the operation of Dukovany NPP.

Figure 7: Diagram of the Czechia model



Source: the Czech authorities

86. ČEZ was to provide equity financing to EDU II of EUR 200 million and the rest is to be financed by state loan.

87. As part of the financing structure, it was envisaged that EDU II would sell all the electricity generated by the NPP to a state owned SPV ("**Supply SPV**") at a fixed price for a set period of time not shorter than 30 years and extendable by 10 years up to a maximum of 60 years pursuant to the terms of an off-take agreement. The Supply SPV was then to sell the electricity at market prices in the market. The Supply SPV was not to be part of the vertically integrated group controlled by ČEZ.

88. The State Loan to EDU II was to amount to about EUR 7.56 billion and was expected to cover the preliminary and construction works phases of the project. EDU II was to pay an interest rate of 0 % during the construction phase of the Project. Thereafter an annual interest rate was fixed to the corresponding state debt costs as determined by the Ministry of Finance for a given year as increased by 1 %, provided that the annual interest rate was to be at least 2%.

89. Article 9 of the LCA specified that the debt financing for the State loas was to be covered by the Ministry from funds created by: (a) the revenues from electricity sales of the SPV; (b) a levy charged by the network operators to final electricity consumers, similar to the existing financing of renewables; and/or (c) contributions

from the State budget.

4.2.4 Relevance in the Slovenian Context

90. **The CZ Project is an example of a government-owned utility-led project as a way to develop and finance a nuclear newbuild where the existing NPP experience of the developer is an important element. The fact pattern tracks the government ownership of NEK as well as of GEN Energija as the nuclear utility leading the development of NEK 2**.

4.3 Sizewell C NPP (UK)

4.3.1 Description of the Project

91. Given the lessons learned from HPC, the UK government passed legislation in March 2022 to permit a Regulated Asset Base ("**RAB**") model (depicted below in Figure 8) for the development and construction of NPPs. In November 2023, the UK government launched a consultation to apply that model to the Sizewell C 3200 MWe NPP ("**SZC**").

92. The UK government ("**HMG**") currently owns 51% of SZC, and EDF is holding the remaining 49%. The reasons for HMG holding a 51% ownership stake is to attract investments from banks, pension funds and other companies to co-fund the development and construction of SZC. It ultimately wants to end up owning just a 20% equity stake.[27]

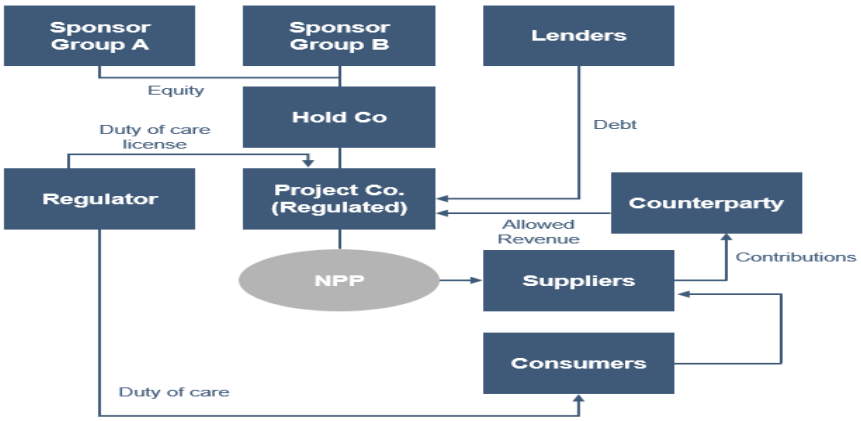
93. The current cost estimates for the construction of SZC range between GBP 22 billion and GBP 40 billion. The project received its Development Consent Order ("**DCO**") in July 2022, which allowed construction to commence. However, many preliminary work obligations (including road surveys and establishment of Governance Groups) needed to be completed in order to "trigger" the DCO which only happened in January 2024.

94. This milestone triggered the release of GBP250 million of HMG funding to be made available over phases to cover £100mn for environment matters; GBP23

[27] *UK invests further GBP1.3bn to keep Sizewell C on schedule*, World nuclear news, 23 January 2024, available at: https://www.world-nuclear-news.org/Articles/UK-invests-further-GBP1-3bn-to-keep-Sizewell-C-on#:~:text=In%20November%202022%2C%20the%20UK,to%20the%20final%20investment%20decision.

million for community projects; GBP12 million housing fund; and, GBP12 million to support local tourism. The HMG followed the DCO promptly by announcing further direct investment of GBP1.3 billion at the end of January 2024 although "FID will only occur later this year.[28]

Figure 8: Diagram of RAB model[29]



4.3.2 Project Developer

95. As noted above, EDF is the 49% shareholder in SZC and primary project developer. HMG currently owns the majority of shares (51%) in SZC. However, the UK's Great British Nuclear ("**GBN**") has been touted as a potential developer but their role other than as a facilitator making sites available for new nuclear development (including Small Modular Reactors – SMRs) is still unclear. For the moment, EDF will continue developing SZC, unless a strategic investor with development capabilities buys a majority stake and takes over development responsibilities.

96. It should be recalled that it was initially envisaged that CGN would have a 40% equity role in the project. Due to geo-political reasons its equity stake was taken-over by HMG and EDF.

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[28] Nick Osbourne, *Green light for construction phase as Sizewell C triggers Development Consent Order,* Sizewell C, The Power of good for Britain, 15 January 2024, available at: https://www.sizewellc.com/news-views/green-light-for-construction-phase-as-sizewell-c-triggers-development-consent-order/.

[29] Source: *The UK Nuclear Energy (Financing) Bill 2022 and the RAB Model*, Addleshaw Goddard LLP, 15 March 2022, available at: https://www.addleshawgoddard.com/en/insights/insights-briefings/2022/energy/the-uk-nuclear-energy-financing-bill-2022-rab-model/.

4.3.3 Description of the Financing Structure

97. As noted above the HMG is currently the owner of 51% stake in SZC and as such it has provided cash injections into the project in the early and riskiest stages of the development of NPP. To date, the UK pledged GBP 700 million in November 2022, GBP 511 million in the summer of 2023 and GPB 1.3 billion in January 2024.

98. Wanting to wind down its equity contribution before the construction phase commences, HMG is in the process of developing the RAB model in order to attract banks and other financial institutions to provide equity and/or debt financing to the project. The RAB model is designed to shift the cost of delivering the project onto the end users as from the start of construction.

99. Under the RAB model SZC will sell electricity into the wholesale market at market prices but will only be entitled to the Allowed Revenue as set by Ofgem. The difference between the market price and the Allowed Revenue will be "netted off" with the consumers through the Difference Payment. The Allowed Revenue is to be calculated by Ofgem and is to include return on capital, operating costs, a fund for future decommissioning costs, depreciation, tax, and incentives and penalties. The incentives and penalties enable the developer (and the debt and equity investors) to beat the target return rate and the penalties are there to incentivize completion on time and on budget.

100. Unlike under the CfD model under the RAB model the Allowed Revenue will be financed by a tariff on all consumers. However, the UK government believes that the tariff will save money for consumers relative to the CfD model. The logic is as follows: the CfD model allocates significant risks to investors, and reasonable investors insist on compensation for that risk when negotiating the strike price. In the negotiations, the project developer considers all the expected future capital and operating costs of the project, which are essentially all the same elements covered by the RAB model. However, the project developer will logically refuse to accept a strike price unless it is high enough to provide an attractive return on capital that compensates for the prospective risks. One notable risk is the inability to renegotiate the strike price later even in the face of cost overruns. Any investor in SZC will have in mind the severe losses that EDF and CGN now face at Hinkley Point. Any attempt to replicate the Hinkley Point model would therefore produce an extremely high strike price for Sizewell C to compensate for the risk of overruns.

101. Accordingly and arguably, the RAB model should produce a cheaper outcome for consumers, because the model imposes less risk on investors. Prospective cost overruns will flow through to the consumer in the form of a higher tariff. However,

in exchange, the RAB model should be able to attract investors while offering a much lower rate of return

102. The RAB model should also produce a cheaper outcome by asking consumers to start paying a tariff that contributes to the construction of the facility before it begins operation. In contrast, the CfD model does not provide any revenue source to the investor until the plant starts producing electricity. When negotiating the strike price, a reasonable investor considers that several years will pass before it receives any money at all, and therefore needs to ensure that the strike price is high enough to provide a reasonable return on all the equity and borrowed funds during the construction period. The RAB model does not obviate the need for loans, but the government can start collecting a tariff even during the construction period, and can start servicing the loans promptly, thereby being able to start offering a return on the equity contributions during the construction period. The RAB model does not ask the investors to delay debt service payments and any return on equity until after the commencement of operations.

103. Although the RAB model has some attractions, it also has drawbacks. The RAB model relieves investors of risk by shifting that risk to consumers. Consumers will bear the risk of overruns and will also bear the risk of delays in plant construction, as the RAB model requires them to start paying the tariff before the plant commences operations.

104. The USA relied on a version of the RAB model to fund nuclear power plants for several decades. However, a significant difference was that, at least for the Gen II reactor fleet feature, it denied any compensation to investors until the plant commenced operations. The old US RAB model did not charge consumers any tariffs during the construction period. However, when a new plant would first generate electricity, consumers faced significant spikes in tariffs that would begin to compensate investors for all the overruns and the accumulated interest during construction over the preceding years. Consequently, consumers began opposing the projects, and several regulators concluded that the utilities which had constructed the plants had not behaved reasonably or prudently, and had contributed to the overruns through mismanagement. This policy has evolved since the early 2000s and cost recovery during construction is now being permitted in certain regulated jurisdictions.

105. Essentially, the UK version of the RAB model seeks to avoid the problem of spikes in tariffs, by having consumers make contributions during the construction period itself. Consumers end up paying for more years in total, but the tariff in each year

is lower. The UK is hoping that consumers will accept contributing payments to a project years before they receive any electricity.

106. To make sense of the UK decision to adopt the RAB model, one must recognise that investors are too sensitive to risk right now because of the Hinkley Point experience and that, at least in UK, therefore, they would overprice a hypothetical CfD at Sizewell C. Alternatively, its preference for the RAB model can be attributed to the fact that it dilutes the risk across many millions of people instead of concentrating it on a few corporate entities.

107. It should be noted that the RAB model was used successfully to fund the construction of Heathrow Terminal 5 and the Thames Tideway Tunnel[30]. The latter project concerns a GBP 4.3 billion upgrade of the London's sewer system to cope with the city's growing population. The construction on the first of six tunnels commenced in 2016, and the project is expected to be completed, tested and commissioned by 2025.

108. As at the time of writing this Advice, HMG is reportedly offering a 9% rate of return on capital while investors in SZC are reportedly seeking a 12%-13% return. The disparity in return expectations is driven by the investors' uncertainty of HMG's ability to "deliver" the completed project and the negative experience of significant overruns and delays in the construction of HPC that may require additional calls on equity during the construction stage. Investors may accept a lower return once the government finalises the details of the RAB model and persuades investors that it will shield them from the risks that have affected Hinkley Point.

4.3.4 Relevance in the Slovenian Context

109. **The RAB model is a way to attract funding and financing for a NPP in a regulated market (US / UK) and could potentially be replicated in Slovenia if GEN Energija is seeking to attract private sector investors and lenders into NEK 2 or issue a corporate bond at lower interest rate than would apply under a model that imposed greater risk on investors. The RAB model is similar to the model used to finance Krško NPP**.

[30] Super Sewer Timeline available at: https://www.tideway.london/tideway-timeline.

5. Hybrid Structure 2: Government to Government

5.1 Polish Model

110. An IGA between USA and Poland for the development of six Westinghouse AP1000 reactors was concluded in February 2021, with the expectation that significant funding will come directly from U.S. financing institutions (US-EXIM and U.S. International Development Finance Corporation ("**DFC**") and other OECD ECAs, depending on origins of the goods and services provided for the projects, along with significant equity from the Polish government.

111. Despite the existence of an IGA underpinning these proposed projects financing will be based on the economic and commercial considerations that emerge from a rigorous risk assessment and mitigation analysis.

112. PEJ is the special purpose vehicle established by the Polish government to develop and own the units. It is wholly owned by the Polish government, although the Polish government had expressed a desire for USA co-ownership.

113. At present, an EPC Contract has not been concluded between PEJ and the U.S. consortium (Westinghouse-Bechtel). The U.S. Trade & Development Agency has provided funding for the FEED work. The main financing negotiations have yet to commence. The first unit is targeted for commercial operation in 2033.

5.2 Romania

114. A similar IGA was concluded between Romania and the USA in July 2021 for *inter alia* the refurbishment of Cernavoda Unit 1 and the completion of Cernavoda Units 3 and 4. The Cernavoda units are owned by SN "Nuclearelectrica" S.A ("**SNN**"). SNN is a majority state-owned Romanian nuclear utility (82.49%), with the remaining shares (17.51%) publicly owned after SNN was listed on the Romanian stock exchange in 2013.[31]

115. Subsequent to the signing of the IGA, approximately USD 8 billion in financing (based on letters of interest from US-EXIM and DFC, but subject to compliance with all lending policies) was announced for the refurbishment of Cernavoda NPP Unit 1, the completion of Cernavoda Units 3 and 4. The IGA also included co-

[31] More information regarding SNN is available at www.nuclearelectrica.ro.

operation efforts to introduce SMRs into Romania's longer term energy mix to meet the country's clean energy goals.

116. The financing for the refurbishment of Unit 1 is to be procured primarily from U.S. financing entities such as US-EXIM and DFC and Canada's Export Development Canada ("**EDC**") due the CANDU technology in place at Unit 1, while the financing for the completion of Units 3 and 4 using CANDU technology will be primarily secured from EDC and US-EXIM again, plus other ECAs (BPI France / Italian Export Credit Agency SACE) subject to sourcing of equipment. Any remaining amounts are to be contributed as equity by SNN and yet to be named investors. As in the case of Poland, the IGA provides the umbrella framework under which SNN's financing and off-take agreements will be drawn up in line with the EU state aid *acquis*.

117. It is important to bear in mind that the conclusion of an IGA between two states does not automatically ensure that ECAs will agree to finance the NPP, nor does it guarantee favourable terms.

5.3 Bulgaria

118. On 12 February 2024 the USA and Bulgaria signed an IGA to cooperate in developing Bulgaria's civil nuclear power program.[32] Prior to the formal IGA announcement this year, Westinghouse Electric Company was selected as the technology vendor to provide two AP 1000 reactor units for Kozloduy NPP 7&8 in January 2023.

119. On 19 February 2024, Kozloduy NPP – New Builds Plc., that Hyundai Engineering and Construction (Hyundai E&C) was the only one of the five supplier candidates to have met the requirement to provide construction and commission services of the two Westinghouse AP1000 units for KNPP 7&8[33]. Westinghouse will be responsible for the overall design for the plant. The Bulgarian Parliament set out the following conditions and directives to Ministry of Energy officials, including:

- Finalise negotiations on specific clauses by 15 April 2024;

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[32] *The United States and Bulgaria Sign Agreement on Civil Nuclear Cooperation*, U.S. Embassy in Bulgaria, 12 February, 2024, available at: https://bg.usembassy.gov/the-united-states-and-bulgaria-sign-agreement-on-civil-nuclear-cooperation/.

[33] *Hyundai E&C shortlisted to build new Kozloduy units, World nuclear news*, 19 Februar 2024, available at: https://www.world-nuclear-news.org/Articles/Hyundai-E-C-set-to-build-new-Kozloduy-units.

- FID to be taken by mid-year 2025;
- Engineering and commissioning to be delivered on a fixed price basis;
- KNPP 7 to be operational by 2035 and KNPP 8 by 2037; and,
- 30% of the project to be taken by Bulgarian contractors.

120. The IGA establishes a framework for co-operation between the US and Bulgaria for the development of KNPP 7 and 8 and creates a working group to facilitate the exchange of technical expertise, identification of financing options and continuing exchange of best practices in regulation and oversight of civil nuclear energy.

121. The current EUR 14 billion construction cost estimate for the two units is subject to the final report from Westinghouse to be delivered by end of March 2024. The construction is anticipated to be funded through state participation of 25%-30% and remaining financing secured through external loans, partly backed by state guarantees. The current cost estimates do not include "soft costs" that typically are 10% of the overall project's costs. In addition, the estimated cost of electricity generated by new units is to be capped at EUR 65/MWh.[34]

122. It is important to note that the fixed price requirement and the project cost cap are requirements currently being imposed by the Bulgarian government. It remains to be seen whether these are achieved in the final deal structure. It is our view that the capped EPC estimate is unrealistic and possibly an attempt by the Bulgarian Government to secure public acceptance of this headline number.

5.4 Relevance in the Slovenian Context

123. **If a US reactor vendor such as Westinghouse is being considered for NEK 2, then an IGA between Slovenia and the USA may serve as an umbrella agreement under which G2G discussions can be conducted**.

124. **As mentioned earlier, operating under the aegis of an IGA does not, however, ensure that USA government financing entities such as US-EXIM or DFC will also fund the proposed projects**.

[34] *Bulgaria and USA formalise agreement on Kozloduy 7&8*, Nuclear Engineering International, 14 February 2024, available at: https://www.neimagazine.com/news/newsbulgaria-and-usa-formalise-agreement-on-kozloduy-78-11512686.

6. Other Financing Models

125. In this part we discuss two other financial models for new NPPs: Krško NPP in Slovenia and Visaginas NPP in Lithuania.

6.1 Krško NPP (Slovenia)

6.1.1 Description of the Project

126. Krško NPP is a 2-loop Westinghouse pressurised water reactor, with a rated thermal capacity of 1,882 thermal megawatts (MWt) and 664 megawatts-electricity gross (MWe). Construction of the Krško NPP started 1975. It was built in 6 years, was connected to the power grid in October 1981, and went into commercial operation in January 1983. More than half of the works related to the construction of the power plant were performed by Slovenian and Croatian companies, the other half by Westinghouse and its subcontractors.

127. Krško NPP provides more than one-quarter of Slovenia's and 15% of Croatia's power needs. Over the course of the operation of the plant, the output power was increased to 727 MW gross. On 13 January 2023, the lifetime of the Krško NPP was extended until 2043.

128. The plant is owned 50% by GEN Energija, which is in turn wholly-owned by the Slovenian state, and 50% by HEP, which is in turn wholly-owned by the Croatian state.

6.1.2 Project Developer

129. Savske Elektrarne ("**SE**"), a Slovenian energy company, which owned certain hydropower plants built at the time in Slovenia and Elektroprivreda Zagreb ("**EZ**"), a Croatian electricity company, in equal shares, were the Project Developers.

6.1.3 Description of the Financial Structure

130. In 1970, the Republics of Slovenia and the Republics of Croatia, as constituent republics of Yugoslavia, entered into an agreement to construct two NPPs, one in Slovenia and one in Croatia, in order to meet the additional electrical production needs of the two republics.

131. A joint venture agreement was subsequently entered into between SE and EZ to jointly construct, manage, use and operate the Krško NPP in March 1974.

132. The two companies entered into a turn-key contract with Westinghouse to build Krško NPP for USD 600 million in 1974.

133. In December 1977, Nuklearna elektrana Krško ("**NEK**") was established as a limited liability company in which SE and EZ became co-owners.

134. Half of the financing for the construction of NPP was to be provided by SE and EZ and the other half was financed by loans from US-Exim, CITICORP and PEFCO. The initial term of the loans was 10 years. The US-Exim loan was signed by SE and EZ and was guaranteed by Yugoslavia National Bank. The remaining USD 300 million SE and EZ financed from own funds.

135. The costs of design and construction doubled due to a forty-month delay and the high inflation of the Yugoslav dinar. The additional USD 300 million to be contributed by SE and EZ was raised from domestic banks, including Ljubljanska banka and Privredna banka Zagreb in Yugoslav dinars.

136. Part of the loan repayments were financed by so called "contribution for expanded production" (prispevek za raširjeno reprodukcijo) which was added to the electricity bills of all electricity buyers in Slovenia and Croatia. Later, Eximbank sold its loan to Ljubljanska banka at a 60% discount from the face value of the loan.

137. Over the years, the loans were reprogrammed three times. SE finally repaid its share of the loans in 2011. EZ repaid its loans some years later.

6.1.4 Relevance in the Slovenian Context

138. **We understand that Croatia has expressed interest in being involved in NEK 2 via HEP, the current 50% owner of NEK. The Krško "prispevek" resembles the RAB model currently being developed in the UK for the financing of Sizewell C and could be considered by GEN Energija as a way to finance the repayment of the loans from ECAs and private banks as well as the corporate bonds**.

6.2 Visaginas NPP (Poland, Estonia, Latvia and Lithuania)[35]

6.2.1 Description of the Project

139. In 2007, the state utilities from Lithuania, Latvia, Estonia and Poland entered into an agreement to build a 3200 MWe capacity (2 x 1600 MWe) Visaginas NPP ("**Visaginas**") in Ignalina, Lithuania. In 2008 they set up Visagino Atomine Elektrine ("**VAE**") to further the development of the project and conduct negotiations relating to investment into Visaginas.[36] Their initial shareholdings in VAE were: Poland's Polska Grupa Energetyczna (20%), Lithuania's Lietuvos Energia (20%), Estonia's Eesti Energia (20%), Latvia's Latvenrgo (20%) and the Strategic Investor (20%).

140. After two years of bid preparations, Hitachi-GE's was selected in July 2011 as the preferred bidder to provide a single 1350 MWe Advanced Boiling Water Reactor and as the Strategic Investor to contribute EUR 1 bn into the project. In December 2011, Hitachi-GE initialled the term sheet for the concession agreement with the Lithuanian Ministry of Energy. Shortly, thereafter, Poland's PGE exited the project citing disagreement with VAE's proposed shareholder terms.[37]

141. On 30 March 2012 the Lithuanian Ministry of Energy, following approval by the Lithuanian Parliament, formally entered into a concession agreement with Hitachi-GE which was subsequently also signed by Estonia and Latvia resulting in the following new shareholding structure:[38]

- Lithuania / LTE – 38%
- Estonia / Eesti Energiia – 22%
- Latvia / Latvenergo – 20%
- Hitachi / GE (Strategic Investor) – 20%

142. The cost for Visaginas was estimated at EUR 5 billion, with each shareholder

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[35] *Nuclear Power in Lithuania*, World Nuclear Association, website, March 2024, available at: https://world-nuclear.org/information-library/country-profiles/countries-g-n/lithuania.aspx.

[36] *Hitachi Signed the Concession agreement for New Nuclear Power Plant in Lithuania*, pdf, Tokyo, March 30 2012, available at: https://www.hitachi.com/New/cnews/120330d.pdf.

[37] *Hitachi-GE wins Lithuanian nuclear tender, World Nuclear News, 14 July 2011, available at:* https://www.world-nuclear-news.org/Articles/Hitachi-GE-wins-Lithuanian-nuclear-tender.

[38] *Concession agreement with the strategic investor and project company in relation to the Visaginas new nuclar power*, The Republic of Lithuania and SPV OF HITACHI, LTD and PCO, pdf, available at: https://www.access-info.org/wp-content/uploads/CA_EN_final.pdf.

expected to contribute an amount equivalent to their shareholdings. The equity investment from Hitachi-GE was one of the primary bid conditions that later gave rise to complex negotiations surrounding the investment, including the terms and timing of the equity injection and the terms and timing of Hitachi-GE's exit, post construction.

143. In October 2012, a referendum was held in conjunction with national elections in Lithuania, which saw 67% of Lithuanian voters rejecting nuclear power and the Visaginas project. Following Russia's annexation of Crimea, seven parliamentary parties in Lithuania signed a broad agreement reaffirming their desire to reinforce cooperation with the Baltic and Nordic countries, the EU and the US and their commitment to implement major energy projects such as the Visaginas NPP. However, in November of 2016, the Lithuanian government released a National Energy Strategy signalling a delay in the Visaginas NPP project until it became cost effective. The project was officially abandoned in 2016.

6.2.2 Project Developer

144. VAE was established in August 2008 for the construction of the NPP in which Lithuania's Lietuvos Energija, Latvia's Latvenergo, Estonia's Eesti Energia and Poland's were initial shareholders.[39]

6.2.3 Description of the Financing Structure

145. Although the project and financing structure was never developed in detail, consideration had been given to deploying a Mankala like model with external financing being procured from ECAs (especially JBIC/NEXI and US-Exim) and local, regional and international relationship banks of the project partners and Hitachi-GE[40].

146. Rothschild was engaged as the financial advisor to VAE to obtain expressions of interest from a group of strategic investors in order to reduce the combined shareholding of the initial investors to 51%.

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[39] *Nuclear Power in Lithuania,* World Nuclear Association website, March 2024, available at: https://world-nuclear.org/information-library/country-profiles/countries-g-n/lithuania.aspx.

[40] *Introduction and updates of the Visaginas NPP new build*, Nuclear New Build Congress 2014, Warshaw, Poland, Mindaugas Keizeiris, available as power point presentation: https://www.szwgroup.com/nuclear-new-build-congress-poland-2015/images/4.pdf.

6.2.4 Relevance in the Slovenian Context

147. **The complexity associated with state utilities from different countries trying to develop an NPP together is a key lesson learned from this project. In the case of Visaginas, the NPP was physically to be located in Lithuania which would economically benefit the most from job and supply chain creation, while Estonia and Latvia would be liable for any nuclear risks that occurred in Lithuania. Another factor that sealed the fate of Visaginas was that the estimated cost of power upon completion of the 10-year construction period was only marginally cheaper than NordPool forward power price estimates at the time**.

7. Government to Government – State-owned Enterprises "One-stop Shop" structures offered by Russia & China

148. Government-to-Government ("**G2G**") financing models are typical of the "one-stop shop" approach offered by Russia and China. Projects are financed through sovereign loans/grants based on IGAs that set out strict terms and conditions concerning repayment. The host governments typically accept whatever financial conditions are imposed in return for getting a newly built NPP without taking any cost risks.

149. Noting Slovenia's status as both an EU and NATO member, and considering current geo-political conditions, it is unlikely that these structures are relevant for Slovenia. We note that most of these projects are being undertaken in countries that are below investment grade.

7.1 G2G Projects developed by Rostom

150. Set out below are examples of G2G projects currently being developed by Russia.

7.1.1 Paks II NPP (Hungary)

151. This is a project whereby 2400MW (2x1200MW VVER) reactors, will be construed by Rosatom. It was launched under an IGA in first quarter of 2014 at an estimated cost of USD14.9 billion.

152. The project is 80% financed by a Russian state loan, with the remainder of the financing to come from the Hungarian government. The first unit is expected to

come on-line in 2025 and second unit by 2030.[41/42]

7.1.2 Ostrovets NPP (Belarus)

153. This is a project whereby 2400MW (2x1200MW) VVER AES-2006 units is being built by Rosatom at a cost of around USD 13 billion. About USD 10 billion is financed by an ECA from Russia[43] and the remainder is finance by Belarus government. The first unit was connected to the grid in November 2020 and the second unit in May 2023.

7.1.3 El Dabaa NPP (Egypt)

154. This is a project whereby 4800MW (4x1200MW) VVER units will be built by Rosatom under a contract signed in December 2016. The estimated cost of USD 30 billion is financed by a USD 25 billion loan from the Russian government and the government of Egypt providing the remaining USD 5 billion.[44]

7.1.4 Rooppur NPP (Bangladesh)

155. This is a project whereby 2400MW (2x1200MW) VVER units will be built by Rosatom at a total project cost of about USD 13.21 billion of which 90% is funded by a loan from the Russian government and 10% by government of Bangladesh.[45/46]

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41 *Hungary gets agreement to delay Paks II loan repayment,* World Nuclear Association news, April 30, 2021, available at: https://www.world-nuclear-news.org/Articles/Hungary-gets-agreement-to-delay-Paks-II-loan-repay.

42 *Russia extends loan period for Hungary's Paks-II,* Nuclear Engineering International, May 4, 2021, available at: https://www.neimagazine.com/news/newsrussia-extends-loan-period-for-hungarys-paks-ii-8718825.

43 Moscow is ready to restructure the loan to Minsk for the construction of BelNPP, Interfax, April 20, 2020), available at: https://www.interfax.ru/business/705101.

44 *Moscow is ready to restructure the loan to Minsk for the construction of BelNPP*, Interfax, April 20, 2020), available at: https://www.interfax.ru/business/705101.

45 Todorova Maria, Rosatom will build the Bangladesh NPP Ruppur for $12.65 Billion," *Vedomosti*, December 23, 2015, available at: https://www.vedomosti.ru/business/articles/2015/12/24/622350-rosatom-bangladesh-aes.

46 Kamran Reza Chowdhury, Questions over Russia-funded nuclear power plant in Bangladesh, April 8, 2022, available at: https://www.thethirdpole.net/en/energy/questions-over-rooppur-nuclear-power-plant-bangladesh/.

7.2 G2G projects currently being developed by China

7.2.1 Karachi NPP 2/3 (Pakistan)

156. This is a project whereby 2220 MW (2x1100MW) Hualong One HPR 1000 reactors is to be built by China National Nuclear Corporation at an estimated cost of USD 7.93 billion. The project will be 82% financed by China EximBank and the remaining 18% will be financed by the government of Pakistan.[47]

157. The financing packages provided for these projects by the Russian and Chinese governments and their banks appear reasonable, with competitive headline interest rates and tenors resulting in a good proposition for host governments who otherwise might have struggled to procure similar amounts from external funding sources, due to *inter alia* lack of funds, insufficient credit ratings to access markets, perceived political and regulatory/licensing risk, and/or no nuclear history.

158. In these cases, the terms of the loan agreement often allow the Russian and Chinese entities to gain control of the NPPs in the event of non-payment of the loan. In addition, the short-term nature of the loans appear to have been designed to induce the host governments to seek further financial assistance from their Russian / Chinese partner, as illustrated in the case of the Ostrovets NPP in Belarus.

159. It is also significant that the only country in which projects have been done that is investment grade is Hungary.

8. Phased Financing and Refinancing

160. Before concluding the discussion on different models for financing the construction of new NPPs, we wish to note that phased financing is increasingly seen as a way to finance the construction of new NPPs. Phased financing involves governments and investors committing to finance different phases of the construction of NPP.

161. The stage at which each party funds the project is determined by each party's ability to absorb and mitigate specific risks in exchange for a rate of return that compensates for the risk absorbed. In this way, the party most capable of mitigating certain project risks provides funds at the outset and receives a higher

[47] *China Eximbank provides $3.618 billion preferential buyer's credit for Units 2 and 3 of the Karachi Nuclear Power Plant (KANUPP) Project*, AidData's China research available at: https://china.aiddata.org/projects/41918/.

return, while other parties enter with funds when they are sufficiently satisfied with their ability to mitigate and navigate the remaining risks.

162. Phased financing overcomes what is often a key obstacle to financing new NPPs - the ability (or the inability) of the host government to give a blanket guarantee. Instead of a blanket guarantee, the host government is able to provide sufficient support for key risks that other project parties are either unable or unwilling to absorb, with its support slowly being "unwound" as the project gets sufficiently de-risked, based on successfully achieved milestones that then pave the way for private financing to enter the project.

163. Under this approach, host governments, investors and developers contribute funds pro-rated to their share of equity in pre-construction and construction phases (when project risk is at its peak) and in return receive a higher rate of return.

164. As the project successfully achieves the pre-agreed milestones, a different class of investors can then be approached to consider funding the project at a lower rate of return that reflects the timing of their entry. In particular, financial institutions and other lenders could be approached to provide liquidity as a nuclear project nears completion and is regarded as sufficiently "de-risked," assuming nuclear (operating) risks still remain covered by the operator or host government in the case where a regulated utility is involved and the NPP is being developed to become part of a country's regulated asset portfolio as is being proposed in the case of the Sizewell C NPP in the UK.

165. The proposed financing of Sizewell C NPP comes the closest to phased financing albeit the terms have not yet been agreed. Using the proposed RAB model as an example, the involvement of the UK government provides the "comfort" factor for various investors and financing parties until just prior to the completion of construction. At this point, the investor and financing community with most liquidity (pension funds, insurance companies, wealth funds) are expected to be ready to provide long-term financing as the project is about to enter operation and might even be in a position to secure an investment grade rating. However, as discussed in detail in Part 2.1 of Section C, HMG is struggling to find investors because of the disparity in return expectations.

166. There is much hope in the nuclear sector that there will be an abundance of liquidity ready to flow into projects upon completion of construction and after a few years of robust operating performance enabling the project to be refinanced at lower cost of capital. A key component of success is to structure the project in a

way that a successful refinancing can be achieved including by ensuring that nuclear risks that no lender or investor will take are absorbed by the host government.

167. **In other words, it is important to structure the project from the beginning so as to enable refinancing. This necessitates designing an attractive revenue stream over a long tenor, that is, by ensuring that off-take agreements are signed with creditworthy counterparties or are backstopped by governments.**

D. ASSESSMENT

168. In this Section, we analyse the roles, risks and benefits of the different stakeholders which will be involved in NEK 2 and the ways in which the Consortium may wish to be involved in the Project.

1. Consortium as Potential Off-taker

169. The simplest way in which the Consortium can be involved and support NEK 2 is as an off-taker of a portion of the electricity produced by NEK 2.

170. In parts 1.1 to 1.6 are set on out the six questions the Consortium should consider when deciding whether to become an off-taker of NEK 2 or not.

1.1 What is the electricity price that supports the business needs of the Consortium?

171. The Consortium will need to consider a target price that balances the business needs of its members with its desire to facilitate the development of the Project. The Consortium should consider the value of both a long-term stable price for electricity and the benefits (both tangible and intangible) of that electricity source being clean/green and baseload.

172. The initial responses from Consortium members indicate a strong preference for long-term price stability. One key question is the appropriate level for a long-term fixed price. The appropriate level should depend largely on the Consortium's alternatives, principally the purchase of electricity at prevailing market prices as they develop over time.

173. GEN Energija faces a similar alternative. It would reasonably compare sales to the Consortium to the alternative of selling electricity at prevailing market prices as they develop over time.

174. An option that both sides should explore is whether the Consortium is willing to provide much-needed, early-stage funding to develop NEK 2 in return for a reliable "at cost" price for low-carbon electricity from NEK in proportion to its equity contribution. Expected future market prices should, therefore, constitute a key benchmark for both the Consortium and NEK.

175. If the Consortium commits to purchase power at a long-term fixed price, it will offer the Project a stable revenue stream, which will reduce its risk (as well as facilitate financial modelling) and help it obtain financing. To reflect the value of the revenue stability, the Project would reasonably accept to sell its power to the Consortium at a fixed price that represents a discount to the expected future market price of electricity. A reasonable discount would reflect the value of the stability offered by the Consortium's commitment.

176. From an economic perspective, the value of the Consortium's fixed price commitment depends on the relevant "discount rate" for calculating the present value of future electricity sales in a discounted cash flow analysis. If the Project sold its output in the electricity wholesale market at fluctuating prices, it would naturally perform a discounted cash flow analysis to calculate the present value of the expected revenues from such sales. Following standard practice, the Project would apply a discount rate to the expected future sales at market prices. Appropriate discount rates depend on risk. Higher risk implies higher discount rates, so an appropriate discount rate for sales at market prices should reflect the volatility of electricity market prices. In contrast, the Project should apply a lower discount rate when calculating the present value of prospective sales to the Consortium at fixed prices. The Project would reasonably treat the Consortium's long-term purchase commitment as similar to an investor's commitment to make fixed contributions under a long-term financing arrangement. The relevant discount rate would, therefore, be lower comparable to the interest rate that applies to long-term loans. The lower discount rate applicable to Consortium sales would justify the Project's acceptance of a discount to the expected future market price of electricity. The Project would be able to sell to the Consortium at a lower fixed price while still expecting to earn the same present value as when making higher-risk sales into the market at higher expected market prices.

177. In conclusion, the Consortium should anticipate negotiating for a discount to

expected future market prices to reflect the value that the Project would receive from the Consortium's long-term commitment. The reference to "market prices" is distinct from "cost prices" that seek to recover no more than the costs of building and operating the Project.

178. For the projects under development in the UK, the expectations of future market prices are far lower than the costs of building and operating a new NPP. That is why the recent UK projects need support in the form of CfDs or a RAB model. Given the models discussed in Section C, including the Mankala model, there is the potential for different shareholders to have different motivations regarding the pricing of electricity, in which case different ownership groups could be created with different income streams and rights. While theoretically possible, and perhaps very practical, this would require detailed drafting and extensive negotiation.

179. An appropriate price for the Consortium may not be sufficient to recover the expected costs of the Project, leading to the next question below.

1.2 If a reasonable price of electricity to the Consortium does not recover the costs of construction of NEK 2, would the Slovenian government subsidise the difference?

180. The Consortium's role in providing off-take demand and pricing certainty (subject to the points on cost and schedule risk immediately below) should represent significant value and certainty to both GEN Energija as the project developer and to the Slovenian government.

181. However, if the financial modelling by GEN Energija and other potential equity investors necessitates a higher price than the Consortium can support, the Slovenian government could effectively utilise a CfD structure or a RAB model to balance the competing interests of owners and off-takers.[48]

182. The case of HPC is instructive in this regard (for detail see part 2.1 of Section C). The strike price agreed under the CfD was significantly above the then current

[48] Consideration could also be given to different pricing models, based on ownership interests. Essentially, such an approach would involve the Consortium getting electricity at cost (possibly based on the Consortium's early commitment under an off-take agreement or due to its equity stake), with other users getting a different price (due to their different interests in the Project). However, such structures would create complications that could impact equity interests, resulting in different ownership classes being tied to different revenue streams. At this early stage, such bifurcation would seem to be unduly complicated, noting the deviation from the Mankala model (where all the equity represented all the off-take, creating a unity of interest).

market prices. The strike price enabled the gap between the relatively low market price of electricity and the price necessary to support the financing of the project to be closed. It was reported that EDF had expended approximately GBP 2bn in development costs leading up to the CfD strike price announcement for HPC. The UK government did not force any particular consortium or group of industrial users to pay the high strike price. Rather, the government itself offered to pay the price. Since then, electricity prices increased significantly, making the strike price under the CfD more appealing. **The lesson in all of this is that what is above/below market pricing is not a constant. While industry often favours constant/stable pricing, public opinion might take a different view at certain moments in time. A balance will need to be struck that satisfies both sides of the relationship.**

1.3 Who will bear the risk, if the Project's commercial operations date is delayed?

183. Assuming for a moment that the Consortium's initial position is as a passive off-taker only, then its position should be that any risk for schedule delays should be borne by the owner (and, possibly, the Slovenian government). As solely an off-taker, the Consortium has no role in the design, construction, or operation of the Project. The Consortium's sole role is to support demand for the electricity produced by NEK 2.

184. In this case it would expect relief in case of delays in the construction of NEK 2. In other words, the off-take agreement would need to impose penalty provisions on the Project for delays enabling the members of the Consortium to cover their market exposure in case they are forced to buy replacement power in the market due to such delay. Alternatively, the Project could be held responsible for obtaining the replacement power.

185. If, however, the Consortium is also an equity holder in the Project Company, then the analysis would differ. The easiest approach would be for the Consortium to remain firm in its "no risk" position as off-taker, while negotiating the risk profile on schedule delays on the equity side.

186. For further discussion on equity risk considerations, please refer to Part 2 of this Section. Ultimately, if the Consortium is both a partial off-taker and a partial owner, it will need to assess how best to limit its exposure, recognising that the impact of cost and schedule delays can impact its interest in both roles.

1.4 Who will bear the risk if there is a Project cost overrun? In other words, will such risk be passed through to off-takers?

187. Similar to the risk of schedule delays, the Consortium's initial position as a passive off-taker only should be that any cost overrun risk should be borne by owner of the NPP (GEN Energija + other equity investors) and, possibly, the Slovenian government.

188. To support the financing for the Project, the off-take agreement would be signed at financial close when the Project's estimated cost is agreed. Any changes thereafter would not be passed through to the off-taker, except in certain instances of force majeure.

189. As immediately mentioned above in the schedule delay analysis, if the Consortium is also an equity holder, then the risk analysis would need to be considered from both sides. Again, the easiest approach for the Consortium is to take a "no risks" position as off-taker, but consider the risk profile on cost overruns from an equity perspective to ensure greater certainty of supply at a lower "at cost" price for taking this risk. For further discussion on equity risk considerations, please refer to Part 2 in this Section below.

1.5 What would be the tenor of the off-take agreement that the Consortium would sign?

190. Subject to analysis of EU law on state aid, and recognising the current 22-year repayment tenor (with 29-year door-to-door maximum) of ECA financing for NPP, an off-take agreement of at least twenty-five years might be appropriate taking into consideration the interests of all parties.

191. The long tenor benefits both sides. For the owners, the longer tenor of the off-take agreement would support financing (both debt and equity) by creating a predictable, stable revenue stream. For the off-taker, the Consortium's desire for electricity pricing stability/certainty as well as providing a long-term source of clean baseload electricity (which will support decarbonisation ambitions) are both met. As a comparator, the CfD for HPC is thirty-five years. In other words, and subject to EU state aid approval, the Consortium could seek to obtain an even longer tenor than the minimum recommended 25-year tenor.

1.6 Concluding Thoughts on the Consortium as Off-taker

192. The Consortium's ability to influence the Project's overall structure will be directly correlated to the amount of off-take it is willing to commit and the flexibility it will convey in its pricing.

193. A 25% off-take share does create a certain level of influence, but it might not be determinative. As that share decreases, so too, would the Consortium's influence on NEK 2.

194. Regarding the issue of pricing flexibility, we note that it will be difficult to project or set a price at this early stage of the Project. With that limitation in mind, the Consortium's willingness to be flexible in its approach – possibly conveying a willingness to work within a pricing band that is based on certain reference points – would enable it to be an important player in the overall structuring of the Project.

195. As will be discussed in the next section, by becoming an equity investor in the Project the Consortium will gain greater influence on the Project's development and structuring. Its influence will be a function of the size of the investment and the conditions placed on the investment.

2. Consortium as Potential Shareholder

196. It is important to bear in mind that raising equity (to support development and construction of an NPP is much more difficult than raising debt. Consequently, an early commitment on equity (provided it is material) to NEK 2 would be significant for the Project. At the same time, it would put a significant cost on the Consortium, in the form of requiring the outlays of significant funds several years before the Consortium would actually begin to receive any electricity. The Consortium should reasonably consider the "opportunity cost" of not having the funds available for years.

197. While the Project would benefit from the equity provided by the Consortium as a shareholder in the Project Company, such a role increases its level of risk significantly. As noted above, the two key commercial risks associated with NEK 2 are schedule delays and cost overruns.

198. In parts 2.1 to 2.5 below we discuss the five key considerations for the Consortium to consider when deciding whether it wishes to be a shareholder in the Project.

2.1 What is the reason driving the Consortium's equity investment?

199. The initial consideration that needs to be given to by the Consortium concerns the purpose of its equity investment.

200. If its purpose is to facilitate the Project and to procure the electricity generated roughly at the cost of production, then profitability (as an equity investor in the Project) is not the Consortium's driving motivation. In such a scenario, the Consortium could take a no risk / limited risk approach, particularly if it is looking to refinance itself out of the Project once the Project achieves commercial operation at the end of the construction phase.

201. If, however, the Consortium's reason for investment is the belief that a NPP is a good investment, then its risk analysis would change since it would be behaving more like a classic investor (subject to part 2.3 below).

2.2 What should be the size of the Consortium's equity investment?

202. The next consideration concerns the size of the Consortium's equity investment. While at this early stage in the Project it is difficult to set a threshold percentage, it is important to recognise that the Consortium would need to contribute a material amount of equity in order to have influence on how the Project will be developed and managed.

203. Based on the initial feedback from the Consortium, it should be noted that an equity investment of less than 25% of the total cost of the Project would not appear to be material to the overall cost of the Project. Similarly, it would also be reasonable to presume that a low equity percentage would give the Consortium little to no leverage to negotiate any sort of special equity status that insulates the Consortium from the equity risks discussed below.

2.3 What is the role of the Consortium in the Project as an Investor?

204. The next consideration concerns the role the Consortium envisages for itself in the Project.

205. In this regard it should be noted that a low equity percentage would normally result in little to no influence within the ownership group. There is no magic number that represents the tippling point for influence / lack of influence. As was noted in the

discussion of Hinkley Point C, CGN was able to exact significant concessions relative to its minority ownership stake because that stake represented the go/no go point for the project. At this early stage of the Project, we cannot offer an exact percentage, but we do believe that a 33% equity stake in the Project should provide the Consortium with a meaningful seat at the table.

206. With a 25% equity stake influence is less certain. However, given the Consortium's role as off-taker, and the importance of that role to the overall success of the Project, there could be an opportunity for the Consortium to play a disproportionately (from an equity percentage perspective) influential role in the overall development, structuring, and oversight/management of the Project.

207. The Consortium will need to consider how involved it wishes to get in the Project itself. Based on our understanding at present, it would seem that the Project lacks a functional, as opposed to titular, leadership role (it would seem to lack developer capabilities). If our understanding is correct then the Consortium could advocate for a "Core Team" that would assume leadership of the Project – in effect, the Core Team could take on the "Developer" role. While the composition of the Core Team would, naturally, be influenced by the respective equity percentages within the investor group, the Consortium's ability to demonstrate experiential knowledge and direction/proactivity might enable its representative(s) within the Core Team to have disproportionate influence.

208. Alternatively, the Consortium could take a "passive supporter" role. However, if the collective view within the Consortium is that the Project is strategically important to their individual business lines, then the Consortium would probably need to be more "hands on."

209. With a more active Project management role, the Consortium would find it, however, more difficult to divorce itself from the two risks discussed below: schedule delays and cost overruns.

210. One way for the Consortium to gain a "disproportionate influence" relates to the timing of its equity contribution. Early money is valuable money. Accordingly, if the Consortium were prepared to commit its equity early in the development cycle, it is likely to be able to extract a greater role for itself in the overall development of the Project. This would include the establishment and staffing of the Project Management Organization ("**PMO**")[49] that would provide project management and

[49] Note the Core Team is conceived as a small strategic advisory team for the Project, whereas the PMO develops into a large organisation that is principally focused on the technical execution and

oversight and would represent the owner's interest. Of course, the Consortium should recognise that an earlier contribution raises the opportunity cost of the funds, as the Consortium would have to wait for a longer period before receiving any off-setting benefits from the Project.

2.4 Is the Consortium prepared to take the risk associated with schedule delays?

211. The next consideration concerns the risk appetite of the Consortium to bare the risks associated with any scheduled delays. Any schedule delays could impact an equity holder in two ways.

212. First, if there are penalties under the off-take agreement, then the Consortium as an equity investor would bear those financial risks. Second, any delay in the start of the commercial operation of the Project would delay the revenue stream and increase the amount of interest payable during construction, thereby impacting the Consortium's return on investment. However, as described above, a RAB model could minimise the impact of delays if it entailed tariffs that collected funds to service debt and equity during the construction period.

2.5 Is the Consortium prepared to take the risk associated with cost overruns?

213. Any cost overruns[50] would normally be borne by the owners of the Project, requiring the ownership group to fund the additional costs with further equity contributions into the Project. Alternatively (and the more prudent approach), the Project's financial structure should include a cost overrun facility preferably given by the Slovenian government (and possibly also the Croatian government if it becomes an equity investor via HEP).

214. Any cost overrun facility would come at a price, which would have to be modelled as part of the financial model for the Project. Such a facility will have a negative impact on the Consortium's return on investment but could potentially be financed pro-rata with debt if proper backstop measures are satisfactory to debt providers. However, it is our view that a cost overrun facility will need to be an essential element of any successful financing plan.

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oversight of the Project. Members of the Core Team could be part of the PMO or the Core Team could take on an oversight function vis-à-vis the PMO.

[50] It should be noted that a turnkey solution – a structure where the EPC consortium must deliver an integrated, functional facility that meets performance requirements – would still be available (i.e., separate the responsibility for delivery from ultimate cost exposure).

215. A cost overrun facility will be necessitated by the likelihood that a LSTK contract **will not** be available in the market (see LSTK discussion related to TVO OL3 Project in paragraphs 17 to 25). In such a scenario, both lenders and investors will expect that the Project's financial structure includes a cost overrun facility. Any discussion of such a facility should be focused on the government providing that backstop, either directly (as a loan) or through Gen Energija (as additional equity), as it is best positioned to bear the overrun risk (if the Project is well-structured and the risk is contained).

3. Contractor/Delivery Partners

216. The next consideration for the Consortium concerns the Contractor/Delivery Partners. As mentioned above, an LSTK contract is unlikely to be available in the market.[51] Moreover, given recent developments in Czechia and Bulgaria, it would seem that a US-only delivery consortium (vendor plus EPC contractor) is unlikely. It should also be noted that the final structures for the Czechia and Bulgaria are being negotiated, which underscores the importance of (i) not assuming too much before final contracts are signed; and (ii) monitoring evolving market conditions as new deals are established.

217. While a goal for the NEK 2 should be to fix the EPC contract price as much as possible, it should be expected that certain elements are a combination of uncovered (floating; reimbursable) pricing and indexed/escalated (based on agreed indices and/or formulas) pricing, also being further subject to change orders that arise per the terms of the EPC contract. Accordingly, the financing structure will need to include an owner's contingency to account for amounts that are not fixed.

218. In this regard choosing an experienced EPC delivery team will be critical to the overall success of NEK 2. In assessing such experience, consideration should be given to the following:

- prior and recent NPP experience;
- capacity of the EPC contractor and the supply chain to deliver the Project during the targeted period of construction;

[51] We note the current discussions concerning Kozloduy 7 and 8 in Bulgaria and the views expressed by the Bulgarian government about the role of Hyundai E&C. Until that final deal is signed off on, we remain skeptical that the price will be truly fixed by the EPC contractor. We also note that Hyundai E&C has never built a Westinghouse AP1000 reactor.

- key personnel to be committed to the Project;
- prior experience in Slovenia and/or the region; and
- contracting model, including key terms and conditions, as well as balance sheet strength to support such commitments.

4. Other Off-takers

219. A further consideration for the Consortium concerns who the other off-takers would be. The desire **not** to expose new build NPP projects to competitive markets (i.e., to avoid merchant / market risk) is clear under current NPP project development trends. The aim is to have the off-take for the Project fully committed (or at least committed to a sufficient level to support the overall financial model) under long-term, creditworthy agreements.

220. The key reasons for this are:

- the continued subsidies and other financial tools available to renewable generation (chiefly, wind and solar);
- the continued dispatch preferences for renewable generation; and
- the long development period associated with NPPs, as well as the long operating life of NPPs.

221. The long development and construction phases of NPP projects coupled with the risk of cost overruns and schedule delays means that financiers are unwilling to take merchant / market risk on sales from NPPs. Consequently, and coupled with the (best case scenario) of a maximum off-take from the Consortium of 25%, consideration will need to be given to what is done with the remaining 75% of the electricity generated from the Project. We understand that it is being considered at present that 25% of the electricity would go to Croatian off-takers. Under a RAB model, it would be reasonable to consider whether the associated tariff should extend to electricity consumers in Croatia. If the NPP's output is so large in relation to the Slovenian market that it will prompt exports of electricity, Slovenian consumers may hesitate to accept a RAB model that places the risks on them but leaves the consumers in neighbouring countries the prospects of benefitting from surplus electricity. It is, therefore, worth considering whether the adoption of a RAB model should entail coordination with one or more neighbouring states.

222. The more firmly committed the Consortium is to the Project, the greater the opportunity to have other parties join the Project as off-takers. Of course, if the Slovenian government is willing to undertake the responsibility for both financing the Project and managing (and assuming) electricity market risk (with regard to the remaining 50% of the output), then this issue no longer is a major concern for the Consortium. However, for any financial model to be viable, the government/GEN Energija will need to assess the full electricity being generated from the Project, the use cases for such electricity, and the associated revenue streams for such electricity.

5. What is the role of the Government as Shareholder and Energy/Economic Policy Owner?

223. Next the Consortium should give consideration to the role of the Slovenian government, through GEN Energija, in the Project since it is critical for the overall success of the Project. It will need to assume several of the key roles set out below and discussed in turn:

- Project Developer;
- Financier of Debt and Equity (directly or indirectly);
- Guarantor;
- Off-take Counterparty (possibly).

224. As a Project Developer (through GEN Energija), it will need to assume a leadership role in the Project. However, it remains an open question as to how the PMO is staffed. As noted above, the Consortium could become a valued partner given that most governments lack project development capabilities. Similarly, if GEN Energija has not developed projects recently, it, most likely, will need external support.

225. As a Financier, the government may wish to assume the main role for the equity portion of the project (given the limited equity coming from the Consortium and further noting that GEN Energija will contribute 20% of the total costs of the Project). In addition or alternatively, the government / GEN Energija should also consider directly providing loans or guaranteeing loans as necessary. The goal will be to maximise the debt portion of the overall financing structure, chiefly with ECA financing (and, perhaps, other sources of financing coming from the EU such as EIB and EBRD).

226. Most likely the government will also need to serve as the guarantor, both of any ECA debt and of any off-take structures to support financeability. In case a CfD or RAB structure is adopted, the government will need to incorporate the counterparties to NEK 2 as the seller of electricity.

227. Finally, as the policy lead for the Project the government will need to consider potential fiscal tools to promote overall project viability. Examples of such tools could include:

- Production tax credits;
- Investment tax credits;
- Accelerated depreciation;
- Capacity payments;
- Zero emissions credits;
- Loan guarantee structures (under USA and UK examples, noting and adjusting for the shortcomings); and
- Direct lender and / or guarantor of loans.

228. Such fiscal instruments should be modelled on reference projects from other jurisdictions which are then adjusted for country-specific conditions in Slovenia taking into account the approach taken by the EC when approving state aid in nuclear cases.

229. Noting the multiple roles and responsibilities (exposures; risks) to be borne by the Slovenian government, these “asks” need to be balanced by a comprehensive economic impact analysis that demonstrates the value creation generated. It is a fundamental to the overall structuring of the Project that those benefits that do not inure to the Project (and that do not appear in the Project Financial Model) are properly valued to justify the list of “asks”. These benefits include:

- Energy diversity;
- Energy security;
- Grid stability;
- Decarbonisation / clean energy;

- Jobs (temporary – during construction);
- Jobs (permanent – during operation);
- Impact on secondary economy;
- Tax revenue;
- Educational / technological development; and
- Useful life of the asset (potentially 100 years, recognising that financial models discount everything to virtually zero by the 30-year mark).

6. Who are the other possible shareholders (including Croatia, or others as relevant)?

230. Several factors inform this section of the Advice:

- Project size (electricity generated);
- Project cost;
- Prior nuclear history (Krško project);
- Government undertakings necessary to support Project development and financing; and
- Risk analysis (by Project phase).

231. From a burden sharing perspective (and recognising that the Consortium's equity stake is yet to be determined), GEN Energija/Slovenian government should seek out other partners. Given the prior history and current situation in respect of the Krško NPP, it is our view that Croatia's participation would significantly contribute to the viability and cost structuring of NEK 2. In addition, such burden sharing could enable the revenue from the Krško NPP to be a financing source for the new reactor (the GEN Energija share and could possibly support Croatian interests as well.

232. In other words, the Slovenian government could simply allocate its portion of the Krško NPP revenue stream to support the new reactor. To the extent NEK 2 would be a jointly owned project, this could provide, subject to Croatia's agreement, access to the full revenue stream from the Krško NPP for the financing of NEK 2.

This connectivity with the current operating reactor would provide a unique financing feature for the new reactor. Use of this revenue stream is already contemplated in earlier Sections of this Advice and should be explored further.

233. Based on current market conditions, traditional equity investors are loathe to invest in an NPP during development and construction. Their views on an NPP post-Commercial Operations Date, however, are very different.

234. With this in mind, three conclusions follow regarding the financing of NEK 2:

a. The government(s) (and the associated utilities) will provide the overwhelming share of the equity for the Project during development and construction phases;

b. Equity could be requested from the project delivery team (EPC Contractor and reactor vendors, albeit they normally don't want to or cannot afford to do so), recognising, too, that USA companies would not be a material source of equity; and

c. Refinancing (see discussion in part 8 of Section C) is a very real option, and could include the issuances of green bond (consider the success of both Bruce Power and Ontario Power Generation with green bond issuances that were rated by CICERO and oversubscribed by 6x).

Such a refinancing strategy should be considered as part of the initial financial planning for the Project, so that the off-take structure and overall economics of the Project support a refinancing strategy. The working assumption to be considered is for any refinancing to be triggered at or after the commercial operations date of NEK 2, thereby lessening the burden on the government(s) as positions on the Project can be exited (in whole or in part). From a structuring perspective consideration should be given to splitting ownership and operations, so that any refinancing could be done through the ownership vehicle, leaving the licensed operator unaffected.

7. Lenders

235. Given the current market conditions, as well as our direct experience of NPP projects in development, ECA financing would be the most likely source of financing during the construction phase (for a description of the different sources of finance and OECD ECAs and their lending criteria see the Appendix). Which ECAs is involved will be a function of the country of origin of the goods and

services being provided to NEK 2. As a general rule, the ECAs are able to finance 50% of the local content and up to 85% of the export content value.

236. As examples of financing of new NPPs discussed in Section 1 show, ECAs will require sovereign guarantees to lend to NEK 2. With a sovereign-backed (and non-project financed) structure, the lenders will not exert a high level of control. However, the ECAs will do extensive due diligence (technical, financial, legal) on the Project (and the nuclear program) from reputational risk and economic viability perspectives so as to ensure that the sovereign guarantee is **not** the first line of defense for the ECAs – in terms of security on the loan repayment obligations – if Project runs into trouble. In other words, the ECAs will want to see that the underlying Project is viable in all aspects in order to support debt service.

237. ECAs could also be approached for early-stage support if necessary. By way of example US-EXIM has an Engineering Multiplier Program which can support engineering activities prior to financial close.

238. With ECA leadership, a local bank tranche might be supported, especially given NLB's and other banks in the region's previous experience with financing Krško NPP. Similar to the Barakah NPP, local lenders might look to the ECAs to take the lead on diligence and the negotiation of the main deal structure, with the commercial lending tranche tracking the ECA tranche.

239. Given Slovenia's recent successful 10-year EUR 1.5 billion bond issue (with book oversubscription of about EUR 6.8 and final interest rate set at MS+58bp) as well as EUR 258 million citizen bond issue of February 2024 (interest rate of 34%)[52], we understand that GEN Energija is considering a corporate bond issue guaranteed by the Slovenia as a way to finance about 25% of NEK 2. We understand that GEN Energija is planning a EUR 50 million green bond issue for later this year.

240. So far, we are only aware of the TVO funding the refinancing of OL3 with a corporate bond issue. Given the competitive interest rates secured in the above-mentioned recent bond issues, we believe a corporate bond issue by GEN Energija is an avenue for securing funds that ought to be explored. We understand that over EUR 29 billion is held by Slovenians as deposits in Slovenian banks. The outcome of the referendum on NEK 2 scheduled for November this year will be a good indicator of the willingness of the population to support NEK 2. The possibility

[52] *Ministry of Finance to issue bonds for citizens*, Republic of Slovenia, GOV.SI, 24.1.2024, available at: https://www.gov.si/en/news/2024-01-24-ministry-of-finance-to-issue-bonds-for-citizens/.

of the local population directly having a stake in the Project may well be a way to promote it in the lead up to the Referendum.

E. PROJECT RISK FACTORS AND RISK ALLOCATION

241. In this Section we identify, by way of a risk matrix, the key risks as relate to the parties in the Project be they technical, commercial or financial in nature.

Figure 9: Risk Factors and Risk Allocation Matrix[53]

Risk	Description	Allocation	Comments
Technology	Viability of technology	Vendor / Technology Provider	Reference plants are coming online (AP 1000, EPR) but site-specific differences still pose risk, ie. HPC vs Sizewell C
Siting / Licensing	Securing suitable land and construction and operating licenses	Developer / Sponsor /Govt	UK Govt created Great British Nuclear (GBN) to assist Developers secure sites. UK's NDA recently announced purchase of Wylfa and Oldbury sites from Hitachi
Financial / Equity	Heavy up front investment	Investor / Sponsor / Govt	Does Govt need to act as Super Investor? HMG 51% share in Sizewell C
Construction	Long construction period	Sponsor / Govt	Govts unwilling to support in non-sovereign model but RAB provides HMG halo
Revenue / Price	Unpredictability of future prices	Government	Subsides such as FIT / CfD / RAB mitigate revenue uncertainty
Political / Regulatory	Change in Law / Policy or regulatory requirements	Government	Critical to avert future "Energiwende" repeat
Insurance	Adequacy of coverage	Sponsor / Operator / Govt	Govt must stand behind any gaps in coverage beyond protocol liability limits and availability
Operational	Suitability of operator / plant performance	Operator / Lenders?	Should consider with experienced operator and "Govt wrap" on political and nuclear risks
Nuclear Liability	Nuclear accidents	Operator / Government /Insurers	Govt must be ultimate backstop for any third-party liability beyond insurable limits.

242. The Figure 9 is a generic risk matrix derived from the UK context. It considers the various roles that the UK government needed to play to catalyse private sector investment to finance the development and delivery of new NPPs in the UK, including Small Modular Reactors ("**SMR**"). The risk allocation matrix above clearly illustrates that of the nine key risks inherent in a nuclear new build project, the host government has to bear either sole responsibility or shared responsibility in order to mitigate seven of them.

243. Given that all the indications are that the Slovenian government will play a significant support role through GEN Energija's equity investment, back-to-back guarantees with ECAs, and/or a RAB or CfD model, attracting third-party equity

53 *Market framework for financing small nuclear*, A report to Her Majesty's Government by the Expert Finance Working Group on Small Nuclear Reactors, 2018, available at: https://assets.publishing.service.gov.uk/media/5b6962fc40f0b62e9d7fa8f1/DBEIS_11_-_Market_Framework_for_Financing_Small_Nuclear_EFWG_Final_Report_.pdf.

and/or debt financing is achievable.

244. Figures 10 below shows selected projects discussed in Section C with an allocation of specific risks to the party best suited to mitigate the risk. This matrix should help inform the Consortium about which risk they could potentially bear and which risks need to be borne by Gen Energija and the Slovenian government.

Figure 10: Selected projects from Section C with an effect of risks

PROJECT	SPONSOR/S	Technology	Siting / Licensing	Revenue / Market	Financial / Equity	Construction	Policital / Regulatory	Insurance	Operations	Nuclear Liability
4.1 Barakah (UAE)	ENEC / KEPCO	KEPCO	ENEC	PPA	Sponsors	EPC Contractor	Covered under PPA with recognized GAD support structures	Operator - TVO / Finnish Govt	TVO	Operator (within limits) / Govt
4.2. **Dukovany (Czechia – Proposed))**	CEZ / Govt of Czechia (?)	KEPCO (?)	CEZ (?)	??	CEZ / Govt of Czechia (?)	KEPCO (?)	??	CEZ as Operator (?)	CEZ (?)	
4.3 Sizewell C (UK)	Edf / HMG	EDF	Edf w/GBN	HMG - RAB	EDF / HMG	Edf + (?)	HMG	Operator – Edf	EDF	Operator (within limits) / Govt
5.1 Poland	PEJ (?)	(?)	PEJ (?)	(?)	PEJ / Polish Govt.	(?)	Govt of Poland	(?)	(?)	Operator (within limits) / Govt
5.2 Cernavoda 3&4 (Romania)	SNN (?)	(?)	SNN	PPA (?)	SNN +(?)	SNN + EPC (?)	Govt of Romania	SNN as Operator (?)	(?)	
5.3 Kozloduoy 7&8 (Bulgaria)	NEK / BEH	(?)	NEK / BEH	(?)	NEK / BEH + (?)	EPC)?)	Govt of Bulgaria	NEK as Operator (?)	(?)	
1.1 Olkiluoto 3	TVO (Finland	EPC Contractor	Sponsor	TVO	Sponsor	EPC Contractor	Uncovered but acceptable due to strong regulatory and legal structure of Finland / France	Operator - TVO / Finnish Govt	TVO	Operator (within limits) / Govt
1.2 Exeltium	EDF (France)	No technology risk as power to come from existing Edf NPP fleet	Edf	PPA	Industrial Buyers alongside Debt providers	Edf responsible for Flamanville but not related to Exeltium transaction		Edf and France Inc.	Edf	Operator / Govt.
2.1 HPC (UK)^	HPC (UK)	Edf / Fromatome	Sponsors	HMG - CfD	Sponsors	Sponsors	HMG	Sponsors	Edf	Operator / Govt.
2.2 Vogtle 3 & 4 (US)	Georgia Power/Southern Co.	EPC Contractor	Sponsors		Sponsors / US - DOE Gtees	Sponsors	All US Companies	Sposors / Operator	Sponsors	Operator / Govt.
3.1 Akkuyu (Turkey) *	Rosatom	Rosatom	Turkish Govt. partner	Split 50%/50% PPA and Market	Rosatom	Rosatom	Govt. of Turkey	Rosatom as Operator	Rosatom	Operator / Govt.

Source: Agias Advisory Limited

F. CONSORTIUM'S POTENTIAL APPROACHES

245. In this Section, we present the strawman scenario (qualitative) of the Consortium's potential involvement in NEK 2 by phases. At the end of the Section we also

discuss the key threshold considerations which it should consider at this stage of its exploration of the best way to engage in the Project.

1. Development Phase (objectives, activities, decision criteria, milestones)

246. As discussed in Section D, the Consortium's level of involvement and level of interest in the development phase of the Project will depend on its objectives. In view of this, the following analysis is written from the perspective of the Consortium being:

- an off-taker of up to (and preferably close to) 25% of the electricity generated from the NPP;
- an equity investor (up to 25%) that is also willing to fund equity early in return for securing "at cost`' power; and
- a key player in the PMO and the Core Team.

247. The focus is on the Consortium's roles, along with the overall viability and progress of the Project. Decisions on a preferred approach will be noted in the Conclusions section of the Advice. Emphasis within the Development Phase is on creating a real project, with this phase concluding with commencement of construction upon the issuance of the construction license from the nuclear safety regulatory authority.

1.1 Objectives

i. Establish role within PMO

ii. Determine maximum achievable off-take by Consortium

iii. Determine target level of equity investment

iv. Determine timing of equity investment

v. Determine roles (and commitment) of Slovenian Government

vi. Determine role of Croatian Government

vii. Establish overall Project viability

viii. Limit overall exposure of Consortium, with primary focus on “risk free” off-take approach

ix. Sign EPC Contract (between Project Co and Delivery Co)

x. Get preliminary agreement on Operating Agreement

xi. Get to FID and achieve Financial Close

1.2 Activities

i. Form Project Development Company (and establish Consortium’s role within it)

ii. Form PMO (and establish Consortium’s role within it)

iii. Develop overall Project Schedule

iv. Develop Project Development Plan

v. Create initial Project Risk Register

vi. Perform Lessons Learned Analysis

vii. Develop procurement strategy

viii. Perform technology screening

ix. Develop contracting strategy

x. Conduct market sounding for potential financing structures (both debt & equity)

xi. Develop Financial Model and preferred financing structure (to include refinancing approach)

xii. Establish off-take structure and pricing

xiii. Develop split owner-operator structure

xiv. Develop overall fuel strategy

xv. Perform full EU law analysis relative to all key approaches/strategies

xvi. Ensure that regulatory co-operation structure is established between exporting country and Slovenian regulatory authority

xvii. Establish overall regulatory / licensing plan

xviii. Verify all site and subsurface date to ensure compliance with updated requirements post-Fukushima

xix. Submit licensing applications, as applicable (e.g., Construction License Application)

xx. Conduct following studies:

- Labour
- Logistics
- Water
- Supply Chain (to include localisation opportunities)
- Electricity pricing forecast (both demand and pricing) for first ten years of operation

xxi. Commencement of Site Preparation Activities / Early Works Agreement

1.3 Decision Criteria

i. Is the off-take structure and pricing acceptable to Consortium? (to include addressing key matters such as schedule delays, cost overruns, and performance shortfalls)

ii. Does the Project have a viable Completion Facility for cost overruns?

iii. Does the Project have a viable Financial Model?

iv. Has a sufficient level of off-take been committed, such that minimum requirements of equity investors are being met?

v. Is the reactor technology proven or is it first-of-a-kind?

vi. Does the chosen Project Delivery Organisation (EPC, reactor vendor, supply chain) have a credible delivery approach?

vii. Is the Project being structured (in all aspects) to track industry best practices (or at least prudent industry practices)?

viii. Have long lead time items orders been placed to support overall Project Schedule?

ix. Has the nuclear regulatory authority issued a Construction License?

x. For reputational risk purposes, have financial systems for the funding of the decommissioning and the disposition of nuclear waste and spent fuel been established?

xi. Have all the risks (by phase) been identified, scored, and allocated, with mitigation and management strategies put in place?

1.4 Milestones

i. Formation of Project Development Company; establishment of PMO

ii. Finalisation of Development budget (pre-Financial Close budget)

iii. IGA between Slovenia & Croatia (as applicable)

iv. IGA between Slovenia (possibly Croatia) and the exporting country and / or reactor vendor (to be considered, based on overall Project approach and geopolitical considerations)

v. Agreement between Project Company and Slovenian (and maybe Croatian) government(s) concerning off-take structure and financing support

vi. Legislation / Government action on fiscal / tax regime to support the Project

vii. Selection of reactor vendor and award of EPC Contract

viii. Receipt of Construction License

ix. FID

x. Financial Close

2. Construction Phase (objectives, activities, decision criteria, milestones)

248. The analysis of this Phase assumes that the Consortium has a significant interest (approx. 25% of the off-take) in the electricity to be generated by the NPP. The priority for Consortium is the successful achievement of commercial operations as evidenced by the issuance of the Operating License by the nuclear safety regulatory authority, with control of the site being transferred from the EPC Contractor to the licensed Operator.

249. In this phase if the Consortium is simply an off-taker, it would adopt more of monitoring role. If, however, the Consortium is an equity investor, it would want to have more of an oversight role, particularly if it can establish a disproportionate role within the PMO.

2.1 Objectives of the Consortium

i. Successful completion of the Project (on time, on budget, achievement of all performance levels)

ii. Entry into Commercial Operation

2.2 Activities of the Consortium

i. Issuance of Full Notice to Proceed ("**FNTP**")

ii. Oversight of construction (ongoing throughout the phase)

iii. Submission of Operating License Application

iv. Development of Operational functions / training of operating staff

v. Finalise terms of Operating Agreement

vi. Further structuring on refinancing approach

vii. Contingency planning regarding the alternative sources of electricity (in the event of schedule delays)

2.3 Decision criteria

i. Issuance of FNTP

ii. Issuance of Notice of Substantial Completion (or equivalent term)

2.4 Milestones

i. Issuance of FNTP

ii. Arrival of nuclear fuel at site

iii. Commencement of testing & commissioning

iv. Substantial Completion

v. Receipt of Operating License

3. Operating Phase (objectives, activities, decision criteria, milestones)

250. Once nuclear fuel is loaded into the reactor, the licensed Operator is the key party relative to the site and to the reactor. As an off-taker in the operating phase the Consortium's main concern will be the reliability of the NPP. In later years, it will need to consider renewal of whatever off-take agreement is in place. As an investor, the Consortium will need to be concerned with annual budgets and the continued profitability of the NPP. As an investor, the Consortium might wish to sell out of its position, in which case refinancing activities is relevant.

251. This Phase commences, as a commercial matter, with achievement of the commercial operations date, but the licensed Operator will assume operational control upon fuel loading.

252. Overall, the Operating Phase is the least dynamic and decisive for the Consortium so the Consortium can assume a more passive role.

253. To facilitate financing, a split owner-operator structure is envisioned, which would be created during the Development Phase, but would have the greatest impact within the Operating Phase.

3.1 Objectives of the Consortium in this Phase

i. Safe operation of the reactor

ii. Stable operation of the reactor (i.e., high capacity factor)

iii. Implementation of refinancing (as desired)

3.2 Activities of the Consortium in this Phase

i. Oversight of operator (budget, etc.)

ii. Activities to achieve Financial Close on refinancing

3.3 Decision Criteria

i. Extension of off-take agreement (at future date)

ii. Level of continued equity role; participation in refinancing

3.4 Milestones

i. Completion of all testing, commissioning, and turnover

ii. Commencement of Commercial Operations

iii. Financial close on refinancing (as applicable)

iv. End of term for off-take arrangements; renewal (if desired; if available)

4. Threshold Issues for Consortium Participation

254. Discussed below are the key threshold consideration concerning the Consortium's participation in NEK 2.

i. Price of Electricity

ii. Project Schedule (and certainty of delivery, to include quality of project teams on both Owner/Operator and EPC Contractor/Reactor Vendor sides) relative to needs of Consortium

iii. Overall financeability of the Project (to include acceptability of Total Project Cost)

iv. Level of support / role of Slovenian government

v. Is this a "good project" from a reputational risk perspective?

vi. Does it wish to be a key part of the PMO (and can it create such a role, based on the off-take and/or equity commitments that it is willing to make)?

G. CONCLUSIONS

255. In this Section, we set out our preliminary recommendations to the Consortium as to the possible ways of being involved in NEK 2. We also propose next steps.

1. Recommendations as to the Nature of Structure

256. We note that some of the recommendations were already discussed elsewhere in this Advice. They are being restated here to reinforce / endorse them.

a. Focus on Off-take Agreement and “no risk” position as an off-taker;

b. As an off-taker, push for a good price over the long term, even if that requires a government subsidy to cover the different targets (off-taker vs. owner) for the off-take price;

c. If the equity contribution is not significant (25% or more), consider early funding to gain greater influence;

d. Utilise revenue from the existing reactor to support financing of the new reactor;

e. As an equity investor, push for RAB model (the Mankala model may be difficult to achieve if Consortium represents only 25% of off-take);

f. Get Slovenian government commitments for:

- guarantees for ECA debt
- guarantees for off-take structure (preferably RAB)
- completion / cost overrun facility
- development funding to get to Financial Close
- fiscal mechanisms to enhance Project viability;

g. Confirm/Formalise participation by Croatia (both equity and off-take), as well as companies from Italy and Austria (ideally, both equity and off-take, but the two can be separated, depending on the positions of the respective companies; we note the possibility that Croatian interests could be distinct from Italian and Austrian interests);

h. Maximise ECA debt financing; and

i. Consider prepackaged refinancing structures.

257. In view of the above, we would recommend a Hybrid Model for the development of NEK 2, that combines various elements of the different models discussed in Section C of this Advice. Once we have had an opportunity to engage with the Consortium, and we better understand the Consortium's views on these elements, we can develop the Hybrid Model. For now, such model will be a combination of off-take and equity so as to reconcile the Consortium's desired positions with other project participants. In devising the Hybrid Model, we will need to consider the risk profile of the project delivery (EPC) contract, the gaps therein, and the need for completion support and how this impacts the overall governance and economics of the Project.

2. Next Steps for the Development of the Project

2.1 Government Engagement Plan

258. Develop an overall strategy to engage with key stakeholders within the Slovenian government to advance the overall Project, as well as position the Consortium accordingly.

*2.2 Development Schedule / Project Development Plan ("**PDP**") with Stage Gates*

259. The PDP should reflect an overall progression of project development activities, noting that most activities will be overlapping. It should reflect, particularly in the schedule, a "planning in reverse" methodology that achieves the desired commercial operations date. Stage Gates should be identified that monitor the overall progress of the Project, particularly using critical path methodologies.

2.3 Project Risk Register

260. The Project Risk Register should be phased (Development, Construction, Operations), and it should be an interdisciplinary effort. It should be done immediately and then updated periodically (i.e., a "living" document). It should reflect the outcomes of the Lessons Learned Analysis (see below).

2.4 Analysis of Potential Contract Structures (e.g., LSTK, Target Price / Fee-at-Risk, Cost Re, Collaborative/Alliance/Integrated Project Delivery)

261. Various EPC contracting structures should be evaluated, both theoretically and based on current market practices. The ultimate structure should reflect the risk appetite of the ownership group, along with input from the Slovenian government (given the need for a cost overrun facility).

2.5 "Lessons Learned" Analysis (global nuclear, country nuclear, global non-nuclear mega-projects, country non-nuclear mega-projects (if any))

262. The Lessons Learned Analysis should be conducted covering multiple examples, which should then be contextualised to NEK 2 and Slovenia. This analysis should then be integrated into the Project Risk Register. This activity is a near-term action item.

2.6 Suggested structure for PMO

263. The overall management of the Project needs to be established. The PMO will function as the Developer organisation, principally led by GEN Energija, with the Consortium looking for rolls in the PMO.

2.7 Economic Impact Assessment

264. Given the need for government support for the Project, this assessment should quantify those benefits created by the Project that are external to the financial model (and, therefore, not captured by the ownership group). These benefits include:

- Energy diversity;

- Energy security;
- Grid stability;
- Decarbonisation / clean energy;
- Jobs (temporary – during construction);
- Jobs (permanent – during operation);
- Impact to secondary economy;
- Tax revenue;
- Educational / technological development; and
- Useful life of the asset (potentially 100 years, recognizing that financial models discount everything to zero by the 30-year mark).

2.8 Examination of potential fiscal incentive programs

265. As the Project is developed further and a financial model is created, the Consortium should promote the examination of potential fiscal support mechanisms that could enhance the Project's economics. These include:

- Production tax credits;
- Investment tax credits;
- Accelerated depreciation;
- Capacity payments;
- Zero emissions credits;
- Early-stage financing (pre-Financial Close);
- Loan guarantee structures (see USA. and UK examples, noting and adjusting for the shortcomings);
- Direct lender and / or guarantor of loans;
- Equity investment;

266. This analysis should be done by reference to use in other projects and in other jurisdictions.

2.9 Further development of RAB model (noting that RAB is not fully settled for SZC at present time)

267. Any RAB model needs to be defined, in terms of both the basic economics and the conditionality associated therewith. In particular, the issues of whether all costs should be passed through to the end users or should certain costs disallowed. This exercise should reference both to USA regulated market structures and the UK's progress with the RAB model which is then adjusted for conditions in Slovenia and EU legal requirements.

2.10 State aid approval from the EC

268. State financing of nuclear new build must be notified and approved by the EC before any such financing is made. Such notification is required pursuant to Article 108(3) of Treaty on the Functioning of the EU ("**TFEU**"). Due to the large capital-intensive nature of nuclear projects state aid approval is granted on an *ad hoc* basis pursuant to Article 107(3) TFEU.

269. As discussed in part 2.1 of Section C, CfD used to finance HPC sought and obtained EC's approval. The original financing structure to finance Dukovany NPP was rejected by the EC in 2022 (for further discussion see point 4.2 of Section C)[54]. However, we understand that negotiations were resumed late last year and are expected to be finalised in the coming months.

270. In our experience it is prudent to keep the EC abreast of the financing plans from early on in the finance modelling and to engage them informally once the structure starts taking shape.

[54] At the time the Commission had a very unfavourable view of nuclear energy. Things have changed since then. On 6 February 2024 nuclear power was declared a strategic technology for EU's decarbonisation in the Net-Zero Industry Act. See https://www.euractiv.com/section/energy-environment/news/not-there-yet-frances-edf-frustrated-with-nuclear-powers-status-in-eus-net-zero-industry-act/.

APPENDIX

Sources of Finance for Nuclear New Build Projects

ECA Financing

- ECAs from Japan, Korea, France & US (primary supplier countries) are major providers of financing, within the context of OECD Arrangement for Nuclear Power Plants;
- Focused primarily on tied-financing products (e.g. Buyer's Credit) provided through Direct Loans and Insurance Cover for commercial lenders;
- Also provide untied credit in certain circumstances through a Direct Loan
- Financing offered covers up to 85% of export contract value + 40%-50% of local contract value assuming minimum eligibility criteria (e.g.. required content/interest for Supplier country) are met;
- Vendors leverage home country ECAs to provide support by issuing LOIs as part of bid packages.

Multilateral Agencies

- Only few MLAs support nuclear primarily in Europe
- Euratom's funding is limited but presence serves as a catalyst for other funding sources;
- EIB limited to Euros 200mn but often work with Euratom to provide underpinning for projects to attract other financing;
- EBRD is a source but only for decommissioning and safety upgrades in former SSRs.

Commercial Bank Market

- International commercial banks have historically funded nuclear projects but under ECA cover;
- European and Japanese banks were primary funders under ECA cover;
- Growing presence of Korean Banks and Institutions in support of Korean vendors / Sponsors;
- Clean risk is very unusual unless for Mankala structure or through a structured credit like Exeltium

Institutional Markets

- Ample liquidity in the institutional market but unavailable for construction financing w/out backstop;
- Insurance companies and pension funds only invested in investment grade projects – impossible during construction but possible in refinancing scenario post-construction;
- Government as debt guarantor or "super investor" could potentially mobilize funds during construction;
- Sovereign Wealth Funds such as KSA's Public Infrastructure Fund ("PiF") stand ready to support with equity and debt support;

The Equator Principles (EPs) is a credit management framework for determining, assessing and managing environmental and social risk in project financing transactions. Close to 100 Financial institutions in over 35 countries have officially adopted the EP principles. Multilateral development banks including ERBD and major ECAs (Export Credit Agencies) common approaches are increasingly drawing on the same standards as the Equator Principles.

Sources of Finance – JBIC/ NEXI (Japan)

ELIGIBILITY CRITERIA - Buyer's Credit

- For JBIC/NEXI tied and untied financing:
  - up to 85% of the foreign content of the contract value can be financed, as long as 30% is of Japanese origin;
  - Local costs of up to 50% of foreign content can also be financed.
  - Neither IDC nor premiums can be financed.
  - JBIC can fund 60% of a committed Facility through a Direct Loan, while Commercial Banks provide the remaining 40% under NEXI insurance cover.
  - JBIC also offers an Overseas Investment Loan Facility ("OIL") which is an untied facility and provided to Japanese companies and their affiliates that have equity participations or provide loans to these overseas companies. https://www.jbic.go.jp/en/support-menu/investment.html

- JBIC had entered into negotiations to provide funding in support of Hitachi-GE's role as supplier of a 1350MWe Advanced Boiler Water Reactor ("ABWR") for the Visaginas Nuclear Power Project. The proposed financing structure included a tied financing component of Direct Loans and NEXI covered loans and OIL in support of Hitachi-GE's requirement to provide EUR1.0 billion in equity funding as the Strategic Investor.
- Typically have required a Government guarantee for nuclear projects which triggers 100% comprehensive coverage for Nexi-covered facilities.

Sources of Finance – KEXIM / KSure (Korea

ELIGIBILITY CRITERIA - Direct Loans and Insurance Cover

- KEXIM / Ksure tied financing:
  - Up to 85% of foreign content of the export contract value can be financed, so long as 30% or even lower share (subject to K-Sure consent) are of Korean Origin.
  - Local costs of up to 30% of foreign content can also be financed. Total financing can include 85% of the eligible contract value plus IDC and premium
  - Typically, 95% political and commercial risk coverage is available from K-Sure for both tied and untied programs (though occasionally 100% or even lower than 95% coverage are also available).
  - KEXIM is required to provide a direct loan for at least 55% of the total KEXIM facility, while providing its guarantee for the remaining 45% of the facility amount. For a smaller facility of not more than USD 200mn, KEXIM provides a direct loan only. https://www.koreaexim.go.kr/site/main
- Most notable KEXIM nuclear financing is the US$2.5 billion Loan Facility for the Barakah NPP in Abu Dhabi. This loan was recently completely refinanced with an equivalent Loan amount from a group of UAE Banks. The financing also secured the classification as a "Green Loan." https://world-nuclear-news.org/Articles/Refinancing-of-Barakah-classed-as-green-loan
- Government Guarantee may be required.

Korea Eximbank

ksure KOREA TRADE INSURANCE CORPORATION

Sources of Finance – BpiFrance

ELIGIBILITY CRITERIA – Insurance Cover and Refinancing Gtee

- BPI France tied financing:
  - The supply contract must meet French content criteria, decided on a case-by-case basis for very large contracts.
  - The total level of financial support for an export contract:
    - Up to 85% of the value of all eligible French costs and services;
    - Up to 40%-50% of the eligible local costs and services depending on country designations;
    - Coverage of IDC and Premium.
  - BPI France provides 95% comprehensive cover (political and commercial risks) on commercial loans. No Direct Loans available.
  - French law passed in 2014 provides refinancing guarantee for investors who refinance banks in a 100% BPI France-covered loan.
- BPI France (as COFACE) has provided - Covered financing for OL 3 – Euros 570mn; Taishan – Euros [2500]mn; and Cernavoda Unit 2 – Euros [390] mn- All transactions supported **EdF**/**Areva** as vendor and shareholder

bpifrance SERVIR L'AVENIR

Sources of Finance – US Export Import Bank

ELIGIBILITY CRITERIA – Direct Loans and Guarantees

- US Export – Import Bank:
  - Goods and services in a U.S. supply contract must be **shipped** from the United States to a foreign buyer. Eligible goods and services in a U.S. supply contract are those; produced/originated entirely in the U.S.; containing U.S.- or foreign-originated components (not exceeding 15%); and produced/originated entirely in a foreign country (other than the buyers country).
  - The total level of support for a supply contract is the lesser of:
    - 85% of the value of all eligible goods and services in the U.S. supply contract, including foreign goods shipped from the US and 100% of the U.S. content in all eligible goods and services in the U.S. supply contract.
    - Up to 40%-50% %of the value of the U.S exports for locally originated and / or manufactured goods and services are also eligible (up to = US content x 30%).
  - Total financing for up to 85% of the eligible export contract plus IDC or eligible local costs, and exposure fees
  - No minimum or maximum limits

EXPORT-IMPORT BANK of the UNITED STATES

Sources of – Multilateral Criteria for Nuclear Finance

ELIGIBILITY CRITERIA

- European Investment Bank (EIB)
  - European projects are eligible under updated policy published in 2013
  - EIB can finance on a stand-alone basis or together with Euratom, which is normally the practice
  - Commitment amount to a project is dependent on global envelope for a particular country

European Investment Bank

- Euroatom
  - Historical player in European NPPs;
  - Euroatom's current lending limit is Euros [4.0bn]. Any increase will require 100% member country approval;
  - Current utilization is Euros ~[3.375bn];
  - Available envelope of Euros ~[675mn] of which Euros~ [300mn] is earmarked for Khmelnitsky 2 NPP (Ukraine);
  - Cernovoda Units 3-4 (Romania) and other CEE NPPs are standing in line for EA allocation

- EBRD Financing for NPPs
  - Manages 7 donor funds totalling Euros 4.0bn supporting nuclear safety and security in the Bank's region.
  - Key focus is on decommissioning Soviet-era nuclear facilities and equipment;
  - Euros [2.5bn] dedicated to Chernobyl;
  - Euros [715mn] dedicated to decommissioning projects in Slovakia (Bohunice); Lithuania (Ignalia); Ukraine (Kozloduy);
  - Safety improvements cannot result in plant extensions, only operating efficiencies; and,
  - Works in concert with Euroatom.

European Bank for Reconstruction and Development

OECD Financing Arrangement For Nuclear Power Plants (2023)

- **FINANCING** can be provided:
  - For the export of complete nuclear power stations or parts thereof, comprising all components, equipment, materials and services, including the training of personnel directly required for the construction and commissioning;
  - For the modernisation of existing nuclear power plants in cases where both the overall value of the modernisation is at or above SDR 80 million and the economic life of the plant is likely to be extended by at least the repayment period to be awarded;
  - For the supply of nuclear fuel and enrichment;
  - For the provision of spent fuel management.
- **REPAYMENTS**
  - Maximum repayment terms were recently increased to 22 years + plus construction and modernisation with door-to-door tenor not to exceed 29 years.
  - Repayments must be made no less frequently than every six months and first instalment of principal and interest shall be made no later than six months after the starting point of credit. Repayments can be made either via:
  - Equal principal + interest repayments (mortgage style)
- **ELIGIBILITY**
  - Up to 85% of eligible contract value (eligibility criteria can differ across ECAs)
  - A down payment of a minimum of 15% of the export contract value is required
- **PREMIUM**
  - The OECD sets guidelines for determining the minimum ECA premium rate for Borrowers situated in countries rated 1 to 7.
- **ENVIRONMENTAL ISSUES**
  - Nuclear power projects are classified as Category A by the OECD in relation to environmental risks and imply strict requirements in terms of project management, environmental assessment and reporting.