DUTCH NUCLEAR NEWBUILD PROGRAM

PRIVATE FINANCING OPTIONS

October 2024

BNP PARIBAS

The bank for a changing world

Executive summary

In this report, we provide an overview of the various private debt financing options, look at recent nuclear financings and the lesson learned and, provide feedback from the interviews with selected investors on their interest for the Dutch nuclear programme

1 Introduction

- The Dutch Government has announced plans to build up to 4 new large scale nuclear reactors in the Netherlands
- BNP Paribas was requested to undertake an assessment of market conditions and potential available liquidity in the private sector to finance a portion of the nuclear newbuild program
- The recent experience of building newbuild nuclear has not been without challenges, these include cost overruns and delays

2 Complementary report

- EY has provided a report to Government stating that some of these risks will need to stay with Government even if they take private sector investment
- A Government Support Package ("GSP") is proposed covering, amongst others revenue support, guarantees, risk allocation, direct investments (debt and equity)

3 Preliminary results

- From a series of interviews with banks, pension funds and institutional investors, we understand financing could be available to fund the Dutch newbuild program
- For some, internal policies already exist, others are re-drafting their policies to include nuclear, and the last group haven't yet had in-dept discussion on nuclear but are not excluding it
- Recent successes for nuclear issuers in the debt capital markets (including EDF, TVO both issuing successful bonds in May 2024, as well as EDF retuning to the market in Sept 2024 in hybrid format with a successful transaction across both Euro and £ funding markets) demonstrates there is plenty of appetite from institutional investors towards nuclear
- Long term cash flows once in operation make these type of projects suitable for duration matching investments of pension and infrastructure funds
- All investors stated that risks should be mitigated through the GSP which will likely lead to additional complexity and costs of private financings

4 Next steps

- The mitigation of the risk(s) through a GSP raises the following questions for the Government, taxpayer and electricity consumer
  - Private sector finance will likely be more costly and make the financing process more complex. In order to make it worthwhile, some of the risks need to be passed on to investors
  - Government needs to find balance on level of support which justifies paying for the private sector money

Samenvatting - Nederlands

In dit rapport wordt een overzicht gegeven van i) verschillende private financieringsopties, ii) recente financieringen van nucleaire projecten en iii) visie van potentiële institutionele investeerders in het Nederlandse nucleaire programma

1 Introductie

- De Nederlandse overheid heeft aangekondigd dat het de ambitie heeft om vier nieuwe nucleaire centrales te bouwen in Nederland
- BNP Paribas is gevraagd om verkennend onderzoek te doen naar potentieel beschikbare private sector financiering om (een deel van) de nieuwe nucleaire centrales te financieren
- Uit recente ervaringen in andere landen blijkt dat de bouw en ontwikkeling van nieuwe centrales zeer complex is, met voornaamste risico's budgetoverschrijdingen en vertragingen in de bouw

2 Complementair onderzoek

- Uit onderzoek van EY, in opdracht van de overheid, blijkt dat het sterk aangeraden wordt dat een aantal risico's gedragen worden door de overheid, ook indien er gekozen wordt voor (deels) private financiering
- EY heeft aangegeven dat in een mogelijk Government Support Package ("GSP") onder andere de volgende elementen terug dienen te komen; inkomenssteun, garanties, risico-allocatie, directe investeringen (schuld en eigen vermogen) van Nederlandse Staat

3 Voorlopige resultaten

- Uit discussies met onder andere banken, pensioenfondsen en infrastructuurfondsen, is gebleken dat (gedeeltelijke) private financiering tot de mogelijkheden kan behoren voor de nieuw te bouwen nucleaire centrales in Nederland (voorwaarden nader te bepalen)
- Een aantal van deze financiële instituten heeft intern beleid ten aanzien van financiering van nucleaire projecten, andere zijn beleid aan het uitwerken. Tot slot is er een groep die (nog) geen standpunt en visie hebben gevormd ten aanzien hiervan, echter sluiten zij het niet uit dat dit in de toekomst wijzigt
- Recente successen voor nucleair gerelateerde obligatie uitgiftes (bijv. obligaties van EDF en TVO in mei 2024, en EDF's hybride (€ en £) in september 2024), laten zien dat er voldoende animo is onder (internationale) institutionele beleggers voor nucleaire energie en projecten
- Stabiele (lange termijn) kastroom van operationele nucleaire centrales maken het een geschikte investering voor institutionele beleggers zoals pensioenfondsen en infrastructuurfondsen
- Voor alle investeerders is een vorm van garanties/steun van de overheid noodzakelijk, hierdoor is het aanneembaar dat private financiering extra complexiteit en kosten met zich mee brengt

4 Vervolg stappen

- Een GSP wat (een deel van) het risico kan afdekken, brengt de volgende vragen met zich mee voor de overheid, belastingbetaler en elektriciteitsconsument:
  - Het gebruik van private sector financiering zal hoogstwaarschijnlijk kostbaarder en complexer zijn ten opzichte van publieke gelden. Om private financiering aantrekkelijk te maken dient bekeken te worden welke risico's overgedragen kunnen worden aan private investeerders
  - Om additionele kosten van private financieren te rechtvaardigen dient de overheid een juiste balans te vinden tussen de omvang van het GSP en de voordelen van private financiering

Content overview of the report

To complement the work Ministry of Climate and Green Growth ("**Ministerie voor Klimaat en Groene Groei, KGG**") has already done on the development of a GSP and discussions with potential bidders and relevant export credit agencies, it requested BNP Paribas, as one of the leading banks in the financing of the energy transition and one with extensive knowledge of the financing of nuclear projects to prepare an initial report.

The report includes:

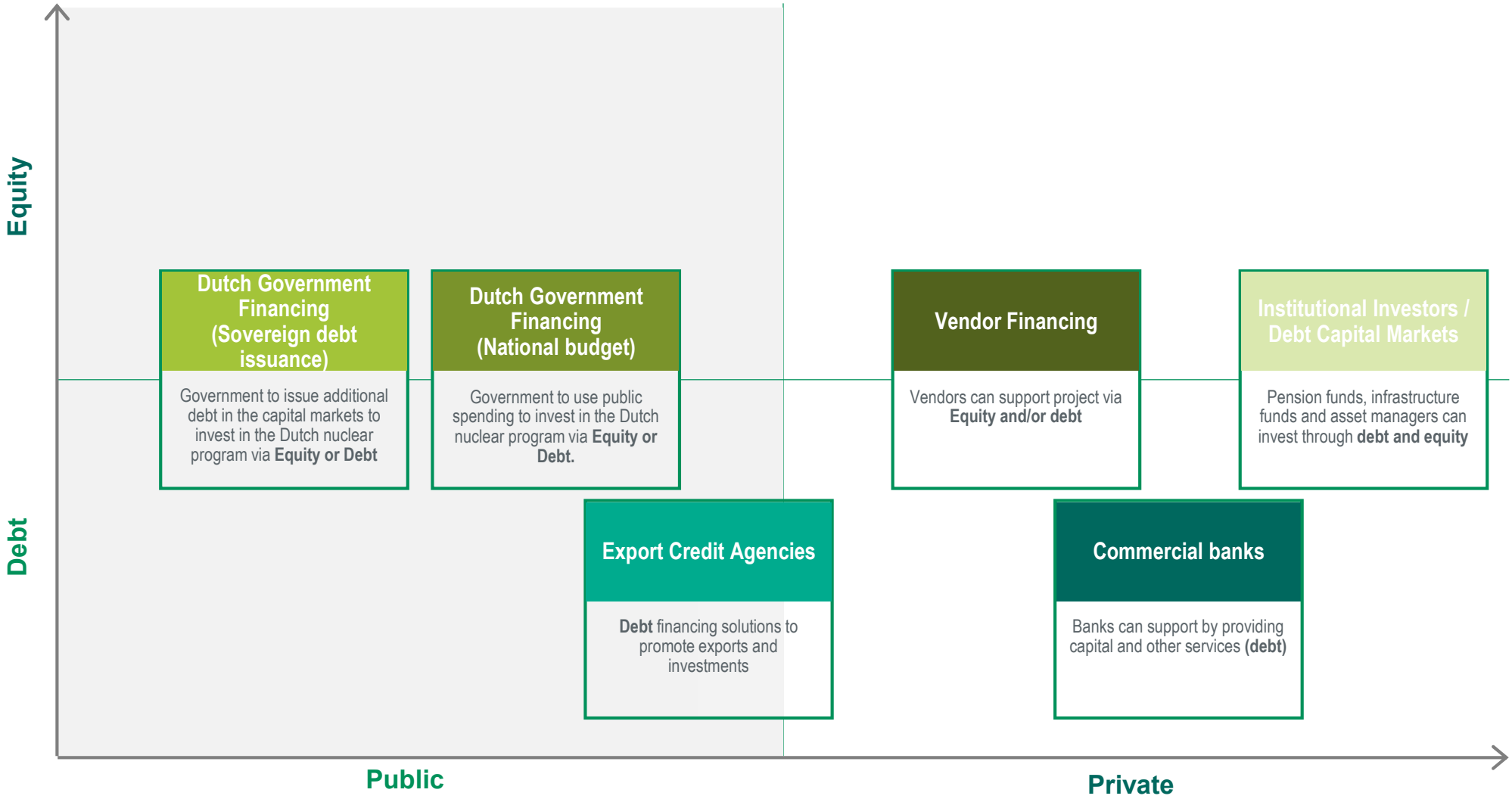
- **Describing the main forms of financing potentially available for nuclear projects**
- **Providing an overview of the considerations that financial institutions bring to such financings**
- **Undertaking a series of structured discussions with a representative sample of Dutch institutions to assess current attitudes and appetite for the financing of nuclear**
- **Making some recommendations for the next steps, should private financing be further considered**

Table of content

1 Different Types of Private Financing

Different Types of Financing – Overview

Overview of different types of financing solutions on the Public/Private and Debt/Equity spectrum
A form of Government financing is likely to always be required



Different Types of Financings - Comparative Analysis (1/3)

The choice of type of financing is influenced by a number of factors

	Pros	Cons
Public Financing	▲ **Lower direct cost** ▲ **Shorter timeline to implement** ▲ **Less work** with no outside parties to manage ▲ Dutch Government is a **well-known issuer** in the market, benefiting from strong investor base and wide market access ▲ **Strong public finances** allows the Dutch Government to consider this option ▲ **Climate Fund** has already been allocated significant amounts of capital	▼ Impact **on national debt levels** if financed through sovereign issuances ▼ **Competition from other projects** if financed through national budget ▼ **Scalability** if 4 reactors are built and possibility to create a benchmark for future financings ▼ Viability of project will potentially be less challenged/assessed by the **enhanced due diligence** of private finance investors
Private Financing	▲ **Broad investor base** (ECAs, Commercial Banks, Institutional investors) ▲ Create a **credit story** / marketing and increasing investment attractiveness of the Dutch nuclear program thanks to **broad investor base**, disclosure of information and continuous monitoring by investment community ▲ Private due diligence process will **validate risk assessment and structural robustness** of the project ▲ Private financing can be utilised for **other purposes**	▼ A GSP will be required / **only some risks are transferrable** ▼ **EU state aid** approval process will still need to be undertaken ▼ **Higher cost** of capital than Government/Sovereign debt ▼ Bringing outside parties adds to **Governance** requirements ▼ Regular expenses (rating agency, underwriters, auditors, depository) ▼ **Potential market fluctuations** for interest rates and refinancing risk

Different Types of Financings - Comparative Analysis (2/3)

The choice of type of financing is influenced by a number of factors

	Pros	Cons
Debt	▲ Broad investor base attracted to **stable (regulated) cashflows for the long term** ▲ Sophisticated lenders that will help with due diligence and bring commercial experience to the procurement process ▲ Various pockets of debt with Export Credit Agencies, Commercial Banks and Institutional Investors likely to be suitable at various stages of the project life	▼ Unlikely to take **construction risk** ▼ Lengthy due diligence and questions from investors ▼ Recent nuclear financings have had numerous challenges ▼ Difficulty to align construction period with tenor of debt facility and repayment requirements ▼ **Ongoing disclosure** of financial information and continuous monitoring by private debt
Equity	▲ Bringing additional equity partners may **reduce risk** for Dutch Government ▲ **Governance** and decision-making can benefit from having various equity partners ▲ Investors can bring **sector expertise** (energy or utilities companies), technological expertise (vendors) or be a financial investor attracted to the sector	▼ **Nuclear risk transfer**. Unclear if Dutch Government would be able to share all of the project risk with the additional equity investors ▼ Few precedents for this sort of equity raise, which increases uncertainty and complexity

Different Types of Financings - Comparative Analysis (3/3)

The choice of type of financing is influenced by a number of factors

	Pros	Cons
Export Credit Agencies	▲ Export credit agencies are set up to provide debt financing solutions to **promote exports and investments**. ▲ Provide guarantees/insurance to banks/lenders to **mitigate financial risk** which allows to access wide pool of investors for direct lending ▲ **Long tenors** (construction period plus up to 22 years for nuclear) ▲ **Competitive pricing** because part of the financial risk is mitigated for commercial lenders	▼ The final amount of financing depends on the commercial **contract amount and the eligibility portion** (according to the equipment sourcing) ▼ **Slower execution** than for a loan from commercial banks
Commercial Banks	▲ **Significant experience** in project and infrastructure finance ▲ Financial services include structuring financing and providing capital ▲ **Large banking panel** ▲ **Flexibility** to align documentation with project requirements ▲ Project will benefit from **thorough due diligence process** of banks incl legal, technical, environmental	▼ Relatively limited experience of new build nuclear financing ▼ Difficulty to align construction period with tenor of debt facility and repayment requirements ▼ Delays, cost overruns and other risks specific to nuclear (such as waste) cannot be passed on to the banks
Institutional Investors	▲ Broad investor base attracted to **stable (regulated) cashflows for the long term** ▲ **Long tenors** (up to 30 years) ▲ Sophisticated lenders that will help with due diligence and bring commercial expertise to manage procurement process ▲ Nuclear has been integrated in **EU Taxonomy** for sustainable investments ▲ Recent nuclear transactions in market demonstrates liquidity exists across different currencies for operational assets	▼ Most institutional experience of nuclear is limited to utilities with operational assets ▼ Lengthy due diligence and questions from investors ▼ **Market fluctuations** for interest rates and refinancing risk ▼ **Ongoing disclosure** of financial information and continuous monitoring by private debt

2 Potential Involvement in Nuclear

Export Credit Agencies

Export Credit Agencies (ECAs) are specialized financial institutions or government agencies that provide support to domestic companies engaging in international trade. Their primary role is to facilitate and promote exports by offering various financial services including:

- **Export financing**: ECAs provide loans or guarantees to foreign buyers, enabling them to purchase goods and services from the exporting country
- **Guarantees**: ECAs issue guarantees to banks or other financial institutions to lend money to foreign buyers, reducing the risk for lenders and encouraging them to finance export transactions
- Export credit insurance: insurance against the risk of non-payment by the foreign buyers
- Political risk insurance: insurance against the losses due to actions from the foreign governments

ECAs have been involved in financing nuclear projects, their involvement has typically included:

- Financing the export of technology, equipment and services from the home country to the country building the nuclear facility
- Guarantees to banks/lenders to mitigate financial risk

Each of EDF, Westinghouse, KHNP have their own ECAs which have supported them on nuclear

- **Bpi France** is currently understood to be reviewing Sizewell C
- **US Export-Import Bank** has provided financing for the export of Westinghouse AP1000 reactors
- **Korean ECAs, K-EXIM and K-SURE,** have been involved in various projects of KEPCO and KHNP, including the Barakah nuclear power plant in UAE

Other ECAs have also been involved in supporting nuclear projects

- Japan Bank for International Corporation (JBIC) has supported companies like Toshiba and Hitachi
- UK Export Finance (UKEF) has provided guarantees and insurance for nuclear projects

As a result, we see export financing as part of the bedrock of the debt package should the Dutch Government decide to use private debt financing

Commercial Banks

1. **Numerous banks are involved in the project financing** space, across infrastructure and energy projects. These financial services and capital commitment could also be applied to nuclear projects.
2. The financing packages are **customised** to meet the specific needs of the project. The debt and the repayment schedule are typically sized using the project's cash flows once it becomes operational
3. Banks will conduct **thorough due diligence** to assess the viability of project, including financing, technical, legal, and environmental aspects
4. For such large projects requiring significant capital, banks will arrange a **syndicate of lenders**. This allows to provide the funding without overexposing any single institution
5. Note that, banks can also offer **advisory services** to help structure the financing, optimize the capital mix and assist in negotiations with contractors, suppliers, regulator
6. We list below a **preliminary analysis of banks' appetite** for the nuclear sector. This will have to be confirmed through a comprehensive market sounding

Overview of potential stance from banks for the nuclear sector

- **Dutch Banks –** Appetite likely, given strategic project for the country
- **Japanese Banks** – Potential interest considering Japan's recent change in position towards nuclear sector, however they remain cautious
- **French Banks** – Likely appetite given large nuclear industry in the country
- **UK Banks** – Involved in current UK nuclear projects, appetite to be confirmed for overseas projects
- **Other financial institutions** - Appetite for public debt market take-outs may initiate the interest to get involved
- **German Banks** – Very limited appetite for nuclear but some showing early signs of interest
- **Nordic Banks** – Unclear but likely to offer small tickets
- **Other European banks** – Significant variation in appetite
- **North-American Banks** – Could be interested by capital markets opportunities, but appetite for B/S support to long-dated loans likely to be limited

Institutional Investors

In infrastructure finance, institutional investors are entities such as pension funds, insurance companies, mutual funds, sovereign wealth funds that allocate capital to long-term infrastructure and energy projects. These **investors seek stable, predictable returns over extended period, making them well-suited to the structured and long-duration nature of project finance**	■ **Long-term investment horizon**: need to find assets/investments which can align with their long-term liabilities (e.g. pension payouts) ■ **Stable returns**: institutional investors are attracted by the stable and predictable cash flows generated by project finance assets which typically have long term contracts or regulated revenues ■ **Large capital allocation**: given their substantial asset base, institutional investors can commit large amounts of capital ■ **Risk appetite**: these investors are generally conservative preferring projects with lower risk profiles
Each institutional investor differs in its investment strategy, the stage of project they target, the risk tolerance and the sectors. We provide here a short description of common types that could get involved in a nuclear project	■ **Infrastructure funds**: primarily invest in infrastructure assets like transportation (roads, bridges, airports), utilities (water, sewage) and social infrastructure (schools, hospitals) ■ **Renewable energy funds**: invest specifically in renewable energy projects, through some broaden to other low carbon investments ■ **Sustainability funds**: these funds invest in projects with a strong emphasis on environmental and sustainability ■ **Pension funds:** pension funds are long term investors that seek long term stable returns provided by nuclear projects ■ **Sovereign wealth funds**: they can invest in a wide range of assets including energy projects
The inclusion of nuclear energy in the **EU Taxonomy** for sustainable activities provides additional comfort to investors to consider nuclear projects as part of their sustainable investment portfolios	■ Note that the decision is debated between investors, some supporting the classification for its potential role in reducing carbon emissions, while others criticised it due to concerns about safety, waste management, and long-term environmental impact ■ Despite the debate, the majority of the large institutional investors are willing to consider nuclear exposure as evidenced by the recent nuclear transactions in the market ■ The challenge is to develop support structures that provide acceptable risk sharing for construction and market risk

Strategic Investors

Strategic investors are entities that invest in nuclear projects with a focus on achieving long-term strategic objectives rather than solely seeking financial returns

- These investors play a crucial role in promoting nuclear by providing capital, expertise, and support for long-term energy and sustainability goals
- These investors typically have a vested interest in the broader goals of energy security, sustainability and technology

We have listed several potential categories:

- **Energy and Utilities companies** seeking to diversify their energy sources and leverage their expertise in energy production (e.g. EDF, Centrica)
- **State-owned enterprises** invest in nuclear as part of national energy strategies
- **Sovereign wealth funds** may invest in nuclear to diversify their investment portfolio and support national energy strategies

Vendor financing can also be considered as part of the Strategic Investors category, these include

- **Nuclear technology providers**: nuclear reactor providers could take part in the debt financing in order to advance their technology and secure long-term contract (e.g. Westinghouse, EDF, KHNP).
- **Engineering and construction firms**: companies involved in the construction and engineering of nuclear facilities can invest to secure contracts

3 Considerations for Private Financing Appetite

Infrastructure Project and Energy Finance Market - Background

Financial markets routinely finance very large energy and infrastructure projects. However, the sheer scale of new build nuclear means that the project would be at the top-end of the largest private financings

1. The Infrastructure project finance market has been very active in Europe and a successful way to finance large projects
2. Extensively used to finance roads, energy projects, airports, telecom network, water management, etc.
3. Pension funds and infrastructure funds invest in such projects for the long-term cash flows that such projects typically provide
4. The more the risks are mitigated resulting in more predictable cash flows, the more leverage can be put on such financing structures
5. Many of the risks in nuclear and infrastructure projects are common and can be linked to their “megaprojects” nature

Recent transaction in Europe include:

Project	Type	Financing
Vantage Towers AG	Mobile towers	€6.9 billion
Baltic Power	Polish renewables	€4.3 billion
INEOS Belgium	Refinery	€3.5 billion
OXG Glasfaser	German fibre	€2.6 billion
Eoliennes en Mer Dieppe le Treport SAS	Offshore wind	€2.5 billion
Eoliennes en Mer Dieppe Iles d’Yeu et de Noirmoutier SAS	Offshore wind	€2.5 billion
Parc du Banc de Guerande SAS	St Nazaire offshore wind	€2.5 billion
H2 Green steel	Greenfield steel plant	€2.4 billion
Dogger Bank A, B, C	Wind farm	€10.1 billion[1]

The Dutch market has also been very active with transactions in a number of fields including data centers, offshore wind and port terminals

Project	Type	Financing
EdgeConnex data centers	European data center portfolio	€2.6 billion
Buitengaats CV / ZeeEnergie CV	Offshore wind	€1.6 billion
Delta Fiber / Gamma Infrastructure III BV	Fibre	€1.5 billion
Koole Terminals Subholding II BV	Port terminal	€515 million
NTT Global Data Centers / AMS1 BV	Data center	€332 million

Notes: (1) Based on GBP/EUR exchange rate of £1:€1.18

Infrastructure Project and Energy Finance - Key Considerations for Investors

We list below the most common obstacles that can deter investors in large infrastructure projects

1. High capital requirement / scale of investment
2. Cost overruns
3. Delays / Timeline
4. Political and Regulatory risks
5. Operational challenges
6. Environmental Impact
7. Contractual risks
8. Long payback periods
9. Access to financing / refinancing risk
10. Technological risk

Key Considerations for Investors – Nuclear specific

Obstacles experienced in the most recent nuclear projects

1. **Construction delay and consequent cost increase**: this is the biggest challenge to overcome
2. **Supply chain capability:** given very few reactors have been built in the West in the past 50 years, the whole supply chain needs to be rebuilt
3. **Workforce availability:** many engineers who worked on the programs in the 1970's are now retired and a new generation needs to step up
4. **Cost management:** the amounts are very significant and any cost overruns can reach many billion of euros. The cost of the equipment is not per se the most expensive part, it is rather the man-hours on-site and all associated costs, together with the consequences of the delay

5. **Operational risk:** investors will want to know who will operate the future power plant, manage fuel supply, ensure safe operations
6. **Decommissioning risk:** this will be key for reputational risk and waste management and ESG policies of the investors. Detailed review of spent fuel, wastewater management and impact on the environment
7. **Design maturity to satisfy regulation:** there is only one plant in the Netherlands, which is of an older technological generation. The chosen technology vendor's design may require adaptation to meet Dutch regulatory requirements
8. We understand Dutch Government is considering a GSP to mitigate such risks
   - A support package of this nature will be essential to raise private finance
   - This report does not cover the GSP, please refer to the E&Y report for this topic

Key Considerations for Investors – Nuclear specific (cont'd)

Obstacles experienced in the most recent nuclear projects

Hinkley Point C ("HPC") Case Study

- Hinkley Point C is using the EDF EPR reactor
- EDF is assuming all the costs for the construction and will only get revenues when operations commence through a CFD contract
- Although lessons learned from Flamanville 3, Okiluoto 3 and Taishan 1 & 2 have been applied, HPC has still experienced schedule delays. Latest expectations are for operations to start in 2029-2031
- Part of the reason for delays included requirement to adapt the EPR design to meet British requirements (c.7,000 changes), leading to time-consuming engineering hours to complete and delayed delivery of the design.
- Supply chain capability has also been a bottleneck with HPC needing to rebuild the supply chain and train a new generation of workforce
- As a result, EDF has experienced significant cost overruns and latest construction cost estimate have increased to £31-35 billion

Okiluoto 3 Case Study

- Okiluoto 3 is also using the EDF EPR reactor
- Areva and Siemens provide a turnkey contract to Teollisuuden Voima Oyj (TVO)
- Design issues: the detailed design points had not been available or agreed, which led to the significant adjustment in the cost and schedule.
- Supply Chain issues: Okiluoto 3 experienced material issues with supply chain due to lack of experience and experienced workforce and lack of detailed design which led to supply chain interface risk
- Impact on construction timetable: the completion of the reactor had been scheduled for 2009 but the start up only occurred in 2019
- Impact on costs: project was over budget by billions of euros and Areva couldn't afford it anymore. It was nationalised by French Government in 2016 and remains responsible for the liabilities related to the Okiluoto 3 project
- Impact on vendors appetite: because market parties took most of the financial impact, they are now more hesitant to replicate this set up

Vogtle Case Study

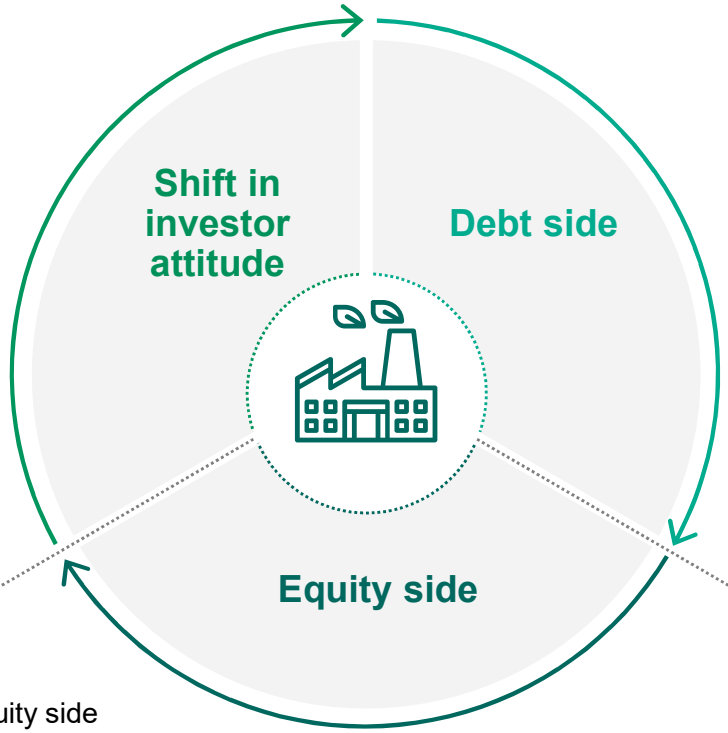
- Vogtle 3 and 4 use the Westinghouse AP1000 design
- The units were the first nuclear new build projects in the United States in over three decades and were initially scheduled for commercial operation in 2016 and 2017, respectively
- The project faced significant construction delays and cost overruns
- These costs overruns can primarily be explained by challenges with supply chain, design not mature enough when construction started, and changes in regulatory requirements
- Impact on total cost: initial budget of USD 14 billion has more than doubled
- Impact on timetable: c. 8 years delay

Financial Markets are increasingly willing to consider Nuclear

But precedents remain few

Over the past 24 months, there has been a significant shift in investor attitude towards nuclear. Several factors have helped support this renewed enthusiasm

- EU taxonomy
- COP28 nuclear backing
- Nuclear is seen by many as critical to transition, providing baseload and big capacity
- EU state aid approvals for various government backing mechanisms, including the most recent in 2024 allowing Czech state aid for the Dukovany nuclear project
- Rise and depth of Sustainable Finance issuances and Green Bond programs. Article 8 and Article 9 funds ("Light and Dark Green") which promote investments or projects with positive ESG objectives have had significant increases in asset under management



The change in attitude has been noted through various debt transactions, though noting that most of these are for operating assets in diversified portfolios

- EDF and TVO green bond issues were a significant first for the EMEA nuclear sector, demonstrating strong investor demand for well-explained bonds
- EDF returned to market in September 2024 in hybrid format with a successful transaction across both € and £ funding markets
- In the USA, Constellation Energy issued 1st US nuclear green bond in March 2024
- There have also been non-deal roadshows for nuclear-related companies
- Other issuers include Bruce Power and Ontario Power Generation which have Green Bond frameworks and have used it to issue a bond in 2022 and 2023 respectively

On the equity side

- There are various equity raises underway (Sizewell C, small modular reactor companies) leading to numerous conversations with private sector on nuclear opportunities
- However, third party equity market appetite has been less evidenced so far as investors remain resistant to taking nuclear risk or waiting to see which small modular reactor will be the chosen technology

Financial Markets are increasingly willing to consider Nuclear (cont'd)

Sizewell C is the most recent/current effort to attract private finance into nuclear newbuild

Sizewell C

- Nuclear power has been identified as a core part of the UK Government's energy and investment strategy, and critical for Net Zero 2050. UK Government plans to deploy 24GW of new nuclear by 2050
- To achieve this, the UK Government is supporting Sizewell C ("SZC") to become the next new build project
- UK Government is committed to securing private finance for new nuclear and, in 2021, introduced the Nuclear Energy Financing Act to enable private finance of new nuclear projects under a RAB model.
- SZC will be delivered as a regulated asset with a robust Regulated Asset Base (RAB) model and a comprehensive Government Support Package (GSP)
- SZC is currently in the market seeking equity and debt investors.

RAB model overview:

- RAB models have been used for essential infrastructure projects, such as regulated networks and utilities, to provide developers with stable long-term returns in return for ongoing capital investment.
- Unlike CfDs, RAB models do not fix the price at which energy is bought and sold, but instead determine the level of return which a Project can generate as a percentage of its RAB.
- The RAB model incentivises Project owners to continually invest in their Project to grow the RAB in order to generate higher returns.
- The RAB is linked to inflation (such as CPI) providing a natural inflation hedge for investors.
- The regulated return takes the form of Allowed Revenue which also provides pass-throughs for certain costs such as operating and financing costs (above pre-agreed thresholds).
- RAB models require project owners to have an economic licence which tends to cover the expected asset life of the Project.

4 Feedback from Interviews with selected financial institutions

Overview of Questions asked during Interviews

1. KGG has asked BNP Paribas to moderate a series of discussions with private sector investors in order to assess readiness, appetite and constraints to participate in a potential nuclear newbuild financing in the Netherlands. We have contacted Dutch institutions only and covered a range of commercial banks, pension funds and asset managers.

2. These discussions were an opportunity for KGG/BNP Paribas to ask questions to inform this report but also provided a platform to answer any questions from the institutions. This resulted in a very good exchange of views and although still at an early stage for everyone (we didn't share any confidential information on the project), we believe that we managed to get a good idea of where private sector investors current positions.

3. We started with a discussion on where the organisation is currently vis-à-vis nuclear and, specifically whether they have a nuclear policy that allows them to do nuclear investments. If the answer was positive, we asked more detailed questions on size of potential investments, what types of products they could use and return expectations. If the answer was negative, we focused on whether they are already aware of the Dutch nuclear programme and what are the main concerns with nuclear. Finally, there were the ones where the answer was not clear-cut. For this group, this discussion was a call to action to work on internal policies to allow nuclear investments.

4. We have collated the feedback into 6 categories which can be found in the following slides. To note, all parties were keen to be kept updated as the project progresses and were also interested to take part in a prospective round table discussion.

Note:

- All feedback is provided on a no-name basis at the request of the institutions, furthermore discussion were informal in nature
- The finance team from KGG was present on the calls
- Only limited (high level) information was provided to the institutions; an NDA should be signed going forward to go more in-depth in the project and obtain more in-debt feedback
- We have told interested parties that a round-table discussion will follow

Overview of answers by interviewees grouped by type and topic (1/2)

	Internal policy on nuclear	Familiarity with the Dutch Nuclear Programme	Concerns related to nuclear
1 Commercial banks	Either have a policy, which may require revision, or acknowledged they need to work on a policy	Yes, various banks had already been approached several years ago when the Government was looking at various financing models	Safety, nuclear waste, construction delays and cost overruns
2 Pension funds	Most do not have a policy but are open to discuss and explore the various financing models	Yes	Nuclear waste, safety, costs of nuclear program
3 Asset managers	Most do not have a policy specific to nuclear	Yes	Perception that nuclear investments haven't been a success in the past years. Question on confirming the role of nuclear in the future energy mix. Risk transfer/sharing with Government

Overview of answers by interviewees grouped by type and topic (2/2)

		Size of potential commitments	Preferred type of investment instrument	Indication of expected return requirements
1	Commercial banks	[€200-500] million	Only Debt	To be determined, but would expect so see some nuclear premium
2	Pension funds	Some have mentioned maximum limits of €200million and others could invest up to €1billion depending on investment instrument	Debt, Equity	Very early stage, but low double-digit return for equity, TBD for debt
3	Asset managers	[€50-300] million	Debt, Equity	Too early to say

5 Conclusions and next steps

Conclusions and Next Steps

There are relatively few precedents for the financing of large scale new nuclear projects and those are dominated by governments, existing nuclear utilities, strategic investors and export credit agencies

There has been a significant change in the attitude of a very significant number of financial institutions towards nuclear, driven by:

- Recognition of the centrality of nuclear to realistic net zero scenarios
- A focus on the benefits of national energy independence
- An appreciation of the value of relative price stability of operational nuclear power in the context of volatile energy markets

This has meant that a significant number of organisations which did not consider nuclear or nuclear related assets at all, or in some cases had specific policies preventing any involvement in such projects, are now changing their approach.

However, there remain significant concerns focussed in particular on:

- Sheer scale of the projects
- Perceptions of high risks of cost over-runs and delays
- Concern about nuclear safety and long-term waste disposal

This means that in most cases financial institutions have an expectation that in any new build project the sponsoring government will provide support structures of varying kinds that will absorb much of the risk, especially those which have a low probability but major impact.

Conclusions and Next Steps (cont'd)

Private sector finance will cost more than public finance if the direct comparator is a government bond yield. The considerations for the use of private finance would therefore include:

- Value of risk transfer to the private sector
- Opportunity to use public funding for other political priorities
- Benefits to the project of skills in risk analysis and project management available in the private sector

In all cases, given the scale of the projects, this is likely to be in the form of a public-private partnership, rather than private financing alone.

Initial discussions with the Dutch financial sector show:

- An awareness of the benefits of nuclear for net zero and national energy security objectives
- A willingness to engage on the topic given its national profile and importance
- A desire to understand the risk / return opportunity that may be available and to assess how this compares with other opportunities
- Varying knowledge of existing new build nuclear projects
- A range of approaches towards nuclear with some ready now to potentially finance nuclear and others considering changes to existing policies/ approaches

Next steps:

Significant work will need to be undertaken to fully assess the potential for private finance for the Dutch nuclear programme. This will include:

1. Further development of a potential government support package
2. Assessment of the pros and cons of private finance in the context of the different forms such a package could take
3. Deepen the engagement with the Dutch financial sector and key potential finance parties from other countries, with market-related feedback which can be used to inform policy development
4. This will be required both for engagement with bidders / their ECAs and for the wider finance markets

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