



**MINISTÈRE
DE L'ÉCONOMIE
DES FINANCES
ET DE LA RELANCE**

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POSSIBLE FINANCING FRAMEWORKS FOR FRENCH NUCLEAR NEW BUILD

**NEA – IFNEC KICK-OFF WORKSHOP ON ISSUES IN THE FINANCING OF
NUCLEAR NEW BUILD**

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Summary

1. What are the main financial frameworks to consider for nuclear new build today?
2. How do these potential financial frameworks fit with country and project specificities?
3. What are the key challenges that still have to be addressed to improve the financing conditions of nuclear new build?

the French nuclear new build

A task force (including administrations and EDF) to propose possible options for meeting the needs of the electricity system in the long term, and their respective pros and cons:

- Best ways to achieve carbon neutrality in 2050?
- What place for nuclear /renewables production in 2050?
- Costs and risks of the nuclear new build : 6 EPR2 (Evolutionary Power Reactor with cost and design optimization)?
- Which Financing and regulation framework?

Report to be submitted to the Government mid 2021

Decision-making in 2022.



1. What are the main financial frameworks to consider for nuclear new build today?

main frameworks to consider except financing

A Design and Build framework by a private sponsor, operated by the national nuclear power producer (EDF) ?

- Framework used by EDF in export projects (in countries where a national company exists)

A Design, Build and Operate model ?

- An integrated model can mitigate risks (inter alia interface risks)
- In this model construction and performance / availability risks can be transferred to the integrated company

main financing frameworks to consider

Private Financing ?

- Private equity or debt funds are construction risk averse
- Taxonomy considerations might prevent certain private investors to deploy capital in the nuclear industry
- Industrial players have a limited financing capacity (equity/debt)

A Government funding ?

- Partial or total public funding could allow the project to be carried out
- but such a route should be carefully monitored taking into account other long term public finance challenges (pensions, health care,...)



1. How do these potential financial frameworks fit with country and project specificities?

frameworks to consider in the case of France

EDF is the natural candidate to design, build and operate a new series of EPR2 but:

- EDF must demonstrate that it has upgraded its industrial capacity and skills in order to implement this program on time and on budget
- Public funding will be necessary to cover a significant share of the bill

Nuclear industry specific features (long-lived, highly capital-intensive assets) imply a specific risk-allocation in comparison with other infrastructure projects :

- The investor must be protected from Electricity price volatility by a dedicated mechanism (as for renewables)
 - The construction risk must be capped
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1. What are the key challenges that still have to be addressed to improve the financing conditions of nuclear new build?

the key challenges to be addressed

In regard to these issues :

- Optimization of nuclear electricity production costs, in particular financing costs (WACC)
- Incentives to contain construction and operation costs
- Compliance with the EU « state aids rules »

what model to adopt ?

- A regulated asset base or contract for difference model ?
 - RAB model could optimize financing costs but limits the risks transfert : this model is used for the regulation of electricity grid in a particular environment (natural monopoly)
 - A CfD model could be costly for the consumers (eg HPC) due to risks transfer to private financing parties
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the key challenges to be addressed

A hybrid model to study ?

- A RAB model to operate the EPR, as for electricity grid regulation?
 - With the same objectives : performance, availability, ...
 - And the same challenges in terms of long term risks allocation : operation costs evolution, maintenance costs,...
- and a CfD model for the construction, as for PPP megaprojects based on performance and availability payment ?