IAEA - Nuclear Economic Workshop Series

Workshop on Economics of Current Generation of Nuclear Power Plants

Virtual Event - March 1-3 2022

NPP Financing Models – Session 6 March 2, 2022

AMJAD GHORI
Managing Director – AGIAS Advisory Limited

agias advisory limited

Table of Contents

1. NPP Finance Models - Approach
2. Characteristics of Successful Finance Models
3. Hybrid Structure – Risk Assessment
4. Learning Objectives

1. NPP Finance Models - Approach

agias advisory limited

- NPP Finance Models flow from the de-risking and risk mitigation approach taken to addressing risks in a specific project in both regulated and unregulated markets
  - The ultimate objective is to strike the right "balance" between risks that can best be borne by each project party and the attendant overall cost implications of the risk allocation to that specific party
  - Attempts to push some or many of the risks to a smaller sub-group of project participants (for whatever reason) will almost always result in an increase in overall project costs or, in the worst case, an increase to such an extent that pursuing the project is unviable
    - If construction risk is to be borne entirely by the Developer/Sponsor/Investors who typically have a higher WACC, the overall cost of the project will increase and be exacerbated further in the event of cost overruns and delays
    - Conversely, if the Host Government, the customer or taxpayer bear the majority of construction risk, the expected rate of return for the Developer/Sponsors/Investor would be much lower.

agias advisory limited

2. Characteristics of Successful NPP Finance Models

- The most successful Finance Models deployed to date involve very large role played by Government throughout the lifecycle of a project, or Government covering specific risks or in the case where risks are "shared" among the owners/invesors/developers
  - G2G - China / Russia's "One-stop Shop" approach where the projects are delivered behind Sovereign loans between Governments (Paks II - Hungary; Roppur - Bangladesh; Ostravets - Belarus; Egypt - El Dabaa; etc)
  - Host Government playing multiple roles (UK Model) including Debt provider, Debt guarantor, equity investor, revenue risk-mitigation and, potentially allowing for inclusion in its Regulated Asset Base to reduce cost of capital, among other mitigants (proposed RAB Model for Sizewell C)
  - Shared Risk - Mankala Model deployed in Finland where all risks and costs are shared by a group of owners/investors/developers/off-takers in return for power at cost.
  - Government as primary funder (UAE) or partial fund provider (US DOE)

3. Necessity for Hybrid Structure – Risk Assessment

agias advisory limited

- Uniqueness of NPPs require hybrid structures tailored to specifically assess risks that can be shared between multiple parties as in the following examples:
  - HPC (UK) - Revenue mitigation through CfD mechanism but with construction, cost and delay risks resting with Developer / Sponsor / Investor
  - Haniviki (Finland) - Russian financing plus EU financing via Mankala structure
  - Barakah (UAE) - Government financing with vendor equity plus portion of vendor-country ECA tranche plus local debt tranche
  - Akkuyu (Turkey) - Russian financing / ownership plus PPA from Turkish wholesaler TETAS
- Government role/roles is common factor in all of the above examples

agias advisory limited

4. Learning Objectives

- Primary learning objectives from the Financial Model section are as follows:
  - Most successful models require heavy involvement by Host Governments, especially for FOAK projects
  - Rigorous risk-analysis required in order to de-risk the project and appropriately allocate risk to reduce overall cost of capital and cost of project
  - No “one-size fits all” model that prevails but hybrid structures are increasingly necessary subject to objectives of Host Governments and other Major Project Participants

Contact Details:

AMJAD GHORI
Managing Director – AGIAS Advisory Limited

Mobile: + 44 7736 842 397
Email: amjad@agiasadvisory.com