Steps for implementing an effective legislative and regulatory framework for nuclear power in emerging countries

Helen Cook

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1. Introduction
Introduction

Essential foundations: Legal and regulatory frameworks are essential foundations of a national nuclear power program

Complex: Establishing a legal and regulatory framework for the nuclear sector is complex, time-consuming and ongoing

Social foundation: Is an essential foundation for public and political acceptance

Commercial foundation: Is an essential foundation for the commercial aspects of a nuclear power project

Project risk: Essential for allocating and managing risk in project contracts – absence/poor framework may create project risk
What is an “effective” legal and regulatory framework?
Indicia of effective legal and regulatory frameworks

- **Peaceful use:** Ensures the peaceful and secure uses of nuclear energy, nuclear science and technology

- **Protection:** Protects individuals, property and the environment from the harmful effects of ionising radiation

- **Roles/responsibilities:** Defines roles/responsibilities of all stakeholders; establishes nuclear regulatory body

- **Understandable:** Creates understandable structure, order and clarity in transparent rules, standards and processes

- **Facilitate:** Acts as a responsible barrier to entry but not an impenetrable roadblock
2. Steps...
Step 1: Adopt and implement international law

**International law:** Contains important state obligations in areas of nuclear non-proliferation, nuclear safety and nuclear security

**Choices:** IAEA recommends that countries with nuclear programs adopt certain treaties – but sovereign choice

**International commerce:** Many subject areas of international law are essential for international commerce

**Obligations:** Ensure country meets its obligations

**Implementation:** National process for implementation – many details are left to the country
Step 2: Establish a **national** nuclear legal framework

- **Comprehensive:** Comprehensively covers all subject areas of nuclear law
- **Implements:** Implements all international obligations – safety, security, safeguards, liability
- **Alignment:** Must align with existing national laws – replace, repeal, override, exempt
- **Regulator:** Establishes a nuclear regulatory body; clarifies roles of other government agencies in the nuclear sector
- **Translation:** Includes a high quality official/unofficial English/working language translation
Step 3: Establish a national legal framework that facilitates the NPP project

Structure: Restrictions on structure of project – eg. a requirement for state ownership/control?

Government support: What government support mechanisms will be available?

Administrative burdens: Streamline administrative processes – eg MOUs between nuclear and environmental regulators

Commercial law: Ease of “doing business” for foreign companies

Other: Tax laws, labour laws, building codes
Step 4: Establish a national nuclear regulatory authority

- **Independent:** Structurally and effectively independent; empowered and confident to make independent decisions
- **Finances:** Sufficient financial resources
- **Human:** Sufficient human resources + experience
- **Cooperation:** Ability to collaborate with IAEA, foreign regulators, hire foreign employees/experts, work with international TSOs
**Step 5: Establish a national regulatory regime**

<table>
<thead>
<tr>
<th>End product:</th>
<th>Will be a national regime but will not be developed from scratch</th>
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<tbody>
<tr>
<td>Harmonisation:</td>
<td>Benefits of harmonisation – adoption of best practices, lessons learned and smooth licensing</td>
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<tr>
<td>Precedents:</td>
<td>IAEA Safety Standards, future vendor’s home country, third country with established regulatory regime</td>
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<td>Timing:</td>
<td>All in place prior to contracting or developed during programme implementation?</td>
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<td>Incremental development:</td>
<td>Models exist but risk may be heightened for project/owner so needs to be carefully managed</td>
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Step 6: Define the licensing process and approach

Types: What are the different licenses – pre-licensing (e.g. design, early site works), step-by-step or one-step

Approach: Prescriptive, performance-based, goal-setting

Contracts: Details are needed for clear risk allocation in contracts – if not enough details have licensing plan/protocol

Communication: Open communication is vital – regulator and applicant/licensee + vendor/contractor

SMRs: Raise multiple new issues to be resolved in the licensing process
Step 7: Apply a nuclear liability regime

Achieve objectives: Compensation is available for victims and nuclear commerce is facilitated

Deal-breaker: Can be a commercial deal-breaker

Operator: Operator is liable but... its much more complicated

Essentials: Need optimal international treaty relationships and comprehensive national law (perfect translation)

Risk: Risk will remain and vendor may seek indemnities from operator/host government – carefully negotiate
Step 8: Implementation

- **Human resources:** Human resources are the implementors
- **Experience:** Experience is vital
- **Cooperation:** Cooperation between all stakeholders is crucial
- **Advisors:** Advisors with the right experience will be key
- **Objectives:** Should be implemented in pursuit of the objectives of effective nuclear regulation
Conclusions
Heavily regulated: The nuclear sector is one of the most heavily regulated

Challenges and benefits: Challenges in establishing the framework and benefits to all if it is effective

Risk: Nuclear projects have high legal and regulatory risks – often owner-side risks

Foundations: Legal and regulatory frameworks are essential for public acceptance and successful commercial contracts for NPP

Effectiveness: Strike appropriate balance between gatekeeping and facilitating