



**KEY CONDITIONS for national policies / strategies  
to allow for a successful industrial involvement**

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## OVERVIEW

- A major undertaking
- Polish strength and path forward
- What is at stake ?
- Identify a leader : planning and preparation
- A strategic partnership
- Set the proper regulatory framework
- Integrate NPP in its socio-economic environment
- Promote Know-How
- Association of SME's to accelerate localization

## DEVELOPING A SUPPLY CHAIN: A MAJOR UNDERTAKING

**Safety** : a key factor for developing a nuclear power plant program.

**Suppliers** : has to comply with strict codes and standards

**Owner/operator** : responsible for relationship with the nuclear regulator, vendors and suppliers during the **whole life cycle of the NPP**.

**Local supply chain : a necessity**

▶ **Construction :**

- ▶ civil works,
- ▶ erection, ....

▶ **Operation :**

- ▶ maintenance
- ▶ Components replacement
- ▶ NDE, ...

## POLISH STRENGTH and PATH FORWARD

- You do not start from scratch : **strong industrial background**
- Path of nuclear competences
- Polish companies work on sites
- Polish companies are in supply chain of major nuclear players

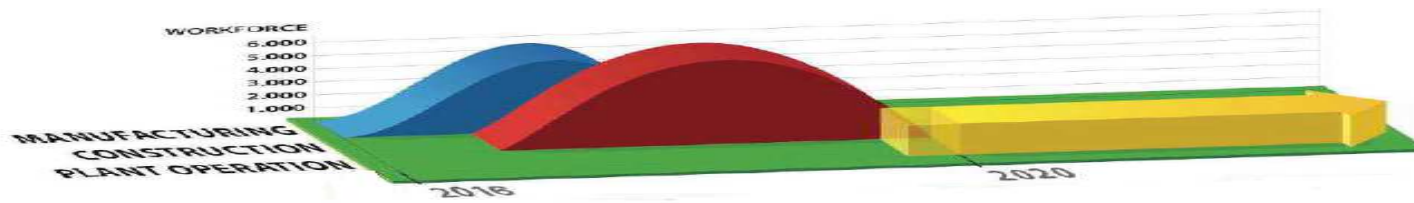
### To go forward:

- Nuclear programme requires additional and joint effort
- Current cooperation with global nuclear industry
- Level of public acceptance



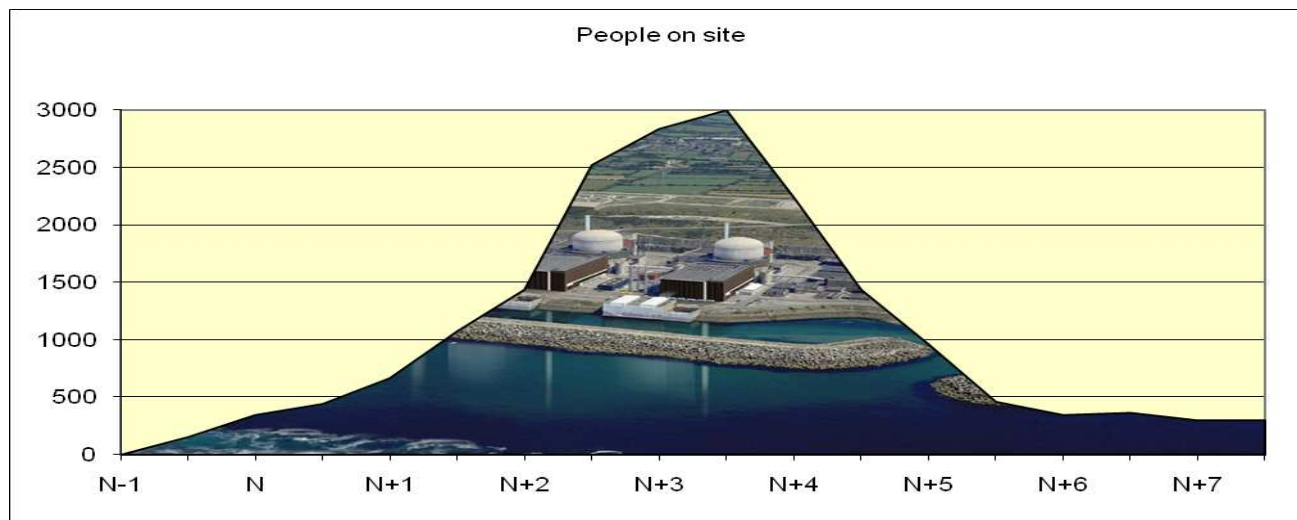
# EMPLOYMENT OPPORTUNITIES

## EMPLOYMENT OPPORTUNITIES IN NUCLEAR NEW BUILD FOR AN EPR TWIN UNIT PLANT



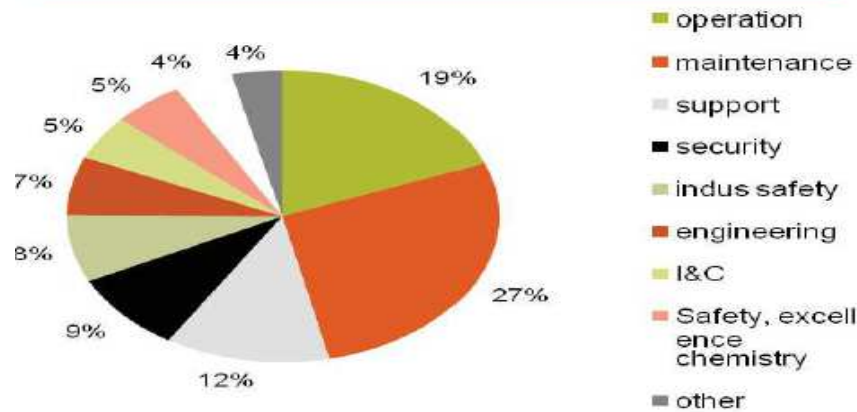
## EFFECT ON LOCAL ECONOMY AND EMPLOYMENT OF A STANDARD NPP PROJECT

Increase employment during both construction and operation  
Involvement of **very local companies** (located near the chosen site) through **direct contracts** with the general contractor, or through sub-contracts.



# JOBS DURING OPERATION & MAINTENANCE

2 EPR units : 700 people



Support to operation, maintenance, outage work services

- ▶ Nuclear logistics and services
- ▶ Non Destructive Examination
- ▶ Handling, reactor opening and closure
- ▶ Electromechanical maintenance
- ▶ Piping, welding
- ▶ Heat insulation
- ▶ Nuclear transportation
- ▶ Components replacement

## Subcontractors for Operation & Maintenance

- ▶ 100 to 200 permanent contractors during operation phase (for 2 units)
- ▶ 300 to 1,000 additional contractors for maintenance during 1 plant outage (per reactor)

## IDENTIFY A LEADER:OVERALL VIEW

### Requirements:

- Need an overall view and management responsibility
- Select the most appropriate nuclear technology
- Manage localization and ensure construction and safe operation of the unit in the future
- An owner-operator with a high level of expertise

### Roles:

- Responsible for the management of technical, contractual and commercial relationships with the nuclear regulator, vendors, suppliers, and other entities during the whole life cycle of the NPP.
- Responsible for managing localization.





## IDENTIFY A LEADER:PLANNING

### About Localization:

- first step is **planning** for local industrial involvement and the supply chains
  - \*feasibility study and localization approach,
  - \*assessment of socio-economic impact,
  - \* consider local industry as part of the supply chain,
  - \*take into account NEPIO/ roles related to assessing/planning local industrial involvement,
    - \* have in mind Lessons learned of owner/operator roles and result of INIR Mission(Integrated Nuclear Infrastructure Review conducted by IAEA )

## IDENTIFY A LEADER : PREPARATION

-second step is **preparation** for local industrial involvement and the supply chains:

- \* management system,
  - \* certification of the suppliers,
  - \* monitoring in manufacturing facilities.
  - \* role of national industrial association for establishing local supply chains,
  - \* NEPIO roles and Government to government arrangement related to local industrial involvement/supply chains,
  - \* and that supply chain issues is a part of an integrated approach,
- and in addition need to enlarge the global view considering Supply chain for operation, maintenance and waste management before decommissioning

## A STRATEGIC PARTNERSHIP

- An experienced nuclear advisor
- A robust and long-term cooperation between the local owner/operator and an experienced nuclear advisor
- Reduce the industrial risk and improve the project financing
- Ensure a strong safety culture
- Support the development of a national supply chain



## SET THE PROPER REGULATORY FRAMEWORK

- Comply** with strict codes and standards
- Rigorous **quality programmes** related to goods and services.
- Need to know as soon as possible which rules to apply and **anticipate** (qualification process between 2 and 4 years )(In-factory inspections )
- A Safety Authority**
  - to define safety objectives ( seismic aspects,equipment classification..),
  - to control implementation and progress

## INTEGRATE NUCLEAR POWER PLANT IN ITS SOCIO-ECONOMIC ENVIRONMENT

- Develop and involve **local suppliers** : an opportunity and a necessity
- Local supply chain is a key factor in public acceptance
- Implementation of « **grand chantier** » **procedure** ( huge construction site )
- Co-operation with the media in **educating the public** :  
Information committee for health professions, conferences, participation in iodine distribution campaigns,...

## PROMOTE KNOW-HOW

- Support the development of **training programs**, nationally or locally
  - Identify, structure and train **the future Operator** at an early stage
  - Not only academic but also **professional and practical** know-how
- In addition:
- **Convention** with the national education, teaching tools,..
  - **Information committee** for health professions, conferences, participation in iodine distribution campaigns,...
  - **Co-operation with the media** in educating the public

## ASSOCIATION OF SME'S TO ACCELERATE LOCALIZATION (1)

-Different levels of knowledge within the Industry

-Objectives:

\*Accelerate localization via Poland experience feedback

\*Promote durable collaboration with partners

-dedicated to develop research&development on a collaborative basis

-provide appropriate training for nuclear sector

-lobbying toward institutional and government bodies and utilities

-facilitate sharing of knowledge and good practices.



## ASSOCIATION OF SME'S TO ACCELERATE LOCALIZATION (2)

- EDF is driving an Association of about 100 French industrial companies providing specialized equipment and services for NPPs :PFME
- Bring a full life cycle of expertise, experience and technologies:
  - Protection & Control Maintenance Dismantling
  - Mechanics Handling PipingWelding Forging Pressure Vessels
  - Design Civil work Survey Quality Control Ageing Safety & risk managt
  - Ventilation insulation Sealing,Hydraulics Tubes Valves pumps
  - Electricity Instrum & control Actuators T&D Emerg.
  - Diesel Computer syst.
  - Fuel cycle Waste Managt Transportation





## ASSOCIATION OF SME'S TO ACCELERATE LOCALIZATION (3)

Based on this example, possible applications in Poland:

Accelerate localization via Poland experience feedback

Promote durable collaboration with partners

- develop research&development on a collaborative basis
- provide appropriate training for nuclear sector
- lobbying toward institutional and government bodies and utilities
- facilitate sharing of knowledge and good practices.





## CONCLUSIONS

- ❖ Political and industrial
- ❖ Public acceptance
- ❖ Anticipation and long term approach
- ❖ Leader to manage
- ❖ Collective approach



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