

Potential of National Industry in supporting NPP development

Presented at:
IAEA National Workshop on:
Industrial Involvement
Jakarta, 24 – 27 February 2020

Suparman

Centre for Nuclear Energy System
National Nuclear Energy Agency
of Indonesia (BATAN)



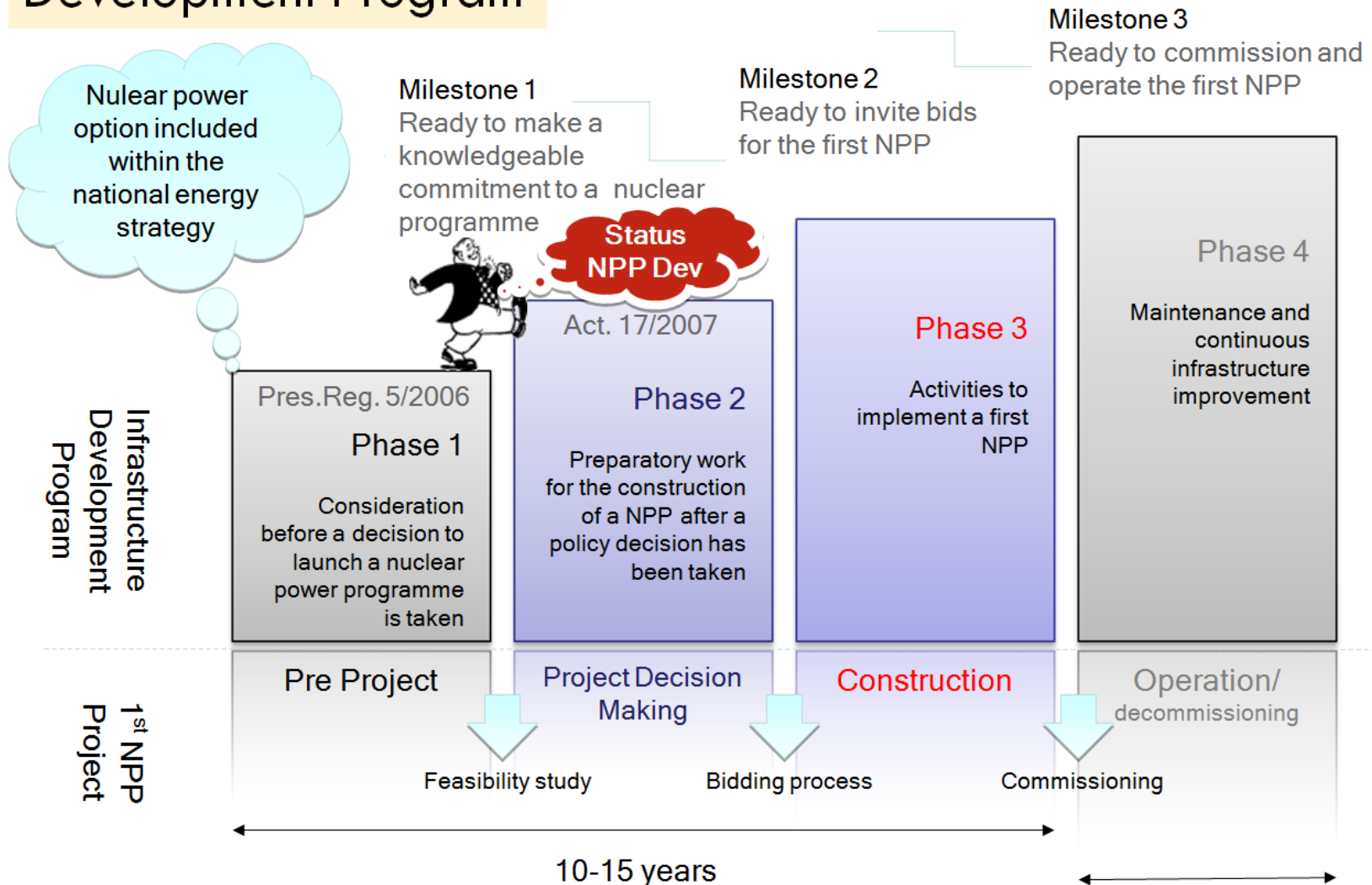
Status of National Nuclear Power Infrastructure Development



- BATAN requested the IAEA to perform an Integrated Nuclear Infrastructure Review Mission (INIR) under the framework of TC programme (INS/4/037) in a letter dated on 5 August 2009.
- An INIR mission provides an external peer reviews conducted by the IAEA in November 23 – 27, 2009
- INIR mission shows that Indonesia has done extensive preparatory work on most infrastructure issues that would allow the country to make decision to further consider introduction of nuclear power, i.e. to go from phase 1 to phase 2 in Milestone methodology.



Nuclear Infrastructure Development Program



Source: IAEA NUCLEAR ENERGY SERIES No. NG-G-3.1, 2007

Status of Nuclear Infrastructure Development

No.	INFRASTRUCTURE ISSUES	PHASE 1, STATUS
1.	National position	Red
2.	Nuclear Safety	Green
3.	Management	Red
4.	Funding and Financing	Yellow
5.	Legislative Framework	Yellow
6.	Safeguards	Green
7.	Regulatory Framework	Green
8.	Radiation protection	Green
9.	Electrical Grid	Green
10.	Human resources	Green
11.	Stakeholder involvement	Red
12.	Site and supporting facilities	Yellow
13.	Environmental protection	Green
14.	Emergency planning	Green
15.	Security	Green
16.	Nuclear fuel cycle	Green
17.	Radioactive waste	Green
18.	Industrial Involvement	Yellow
19.	Procurement	Green



NEPIO not yet developed

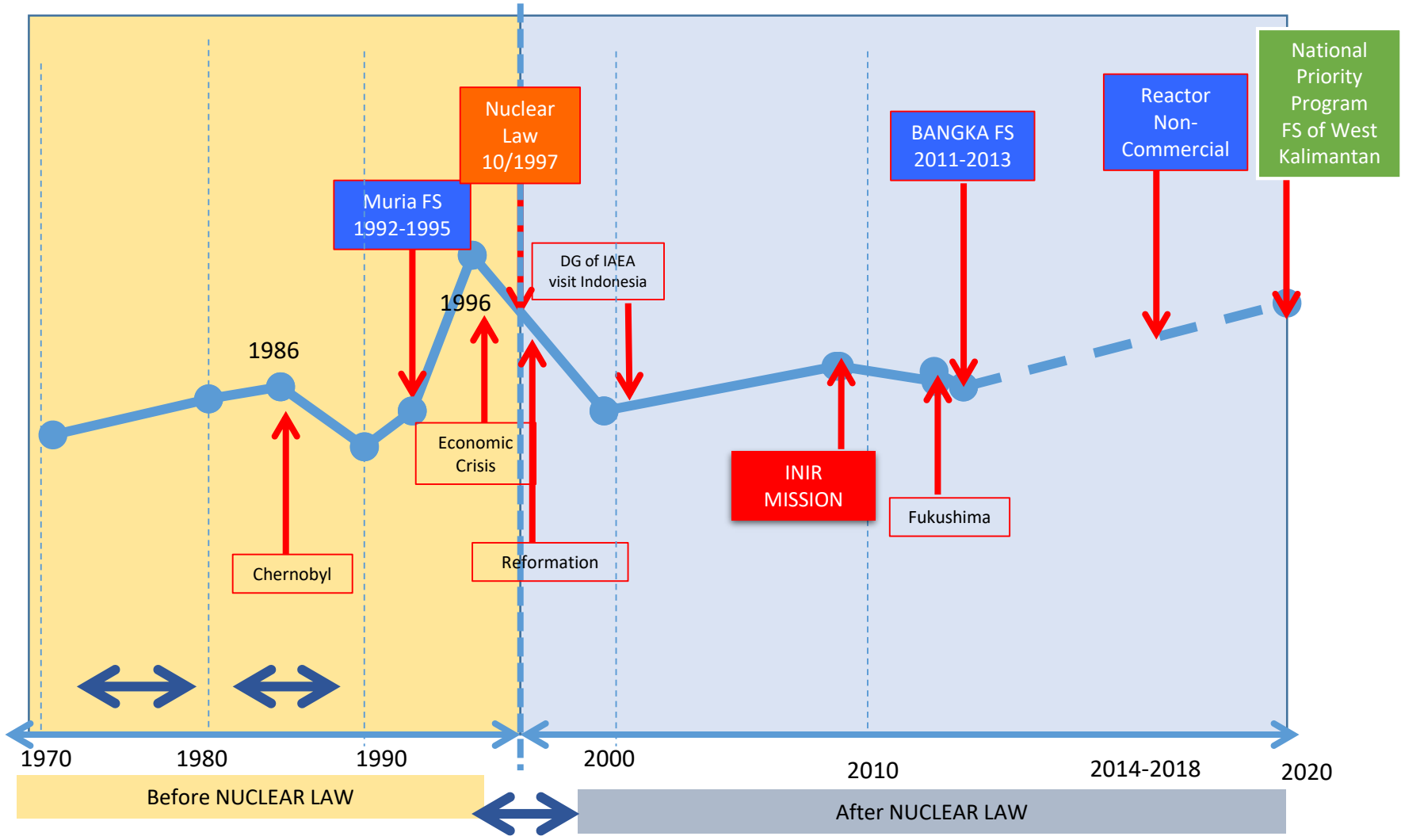


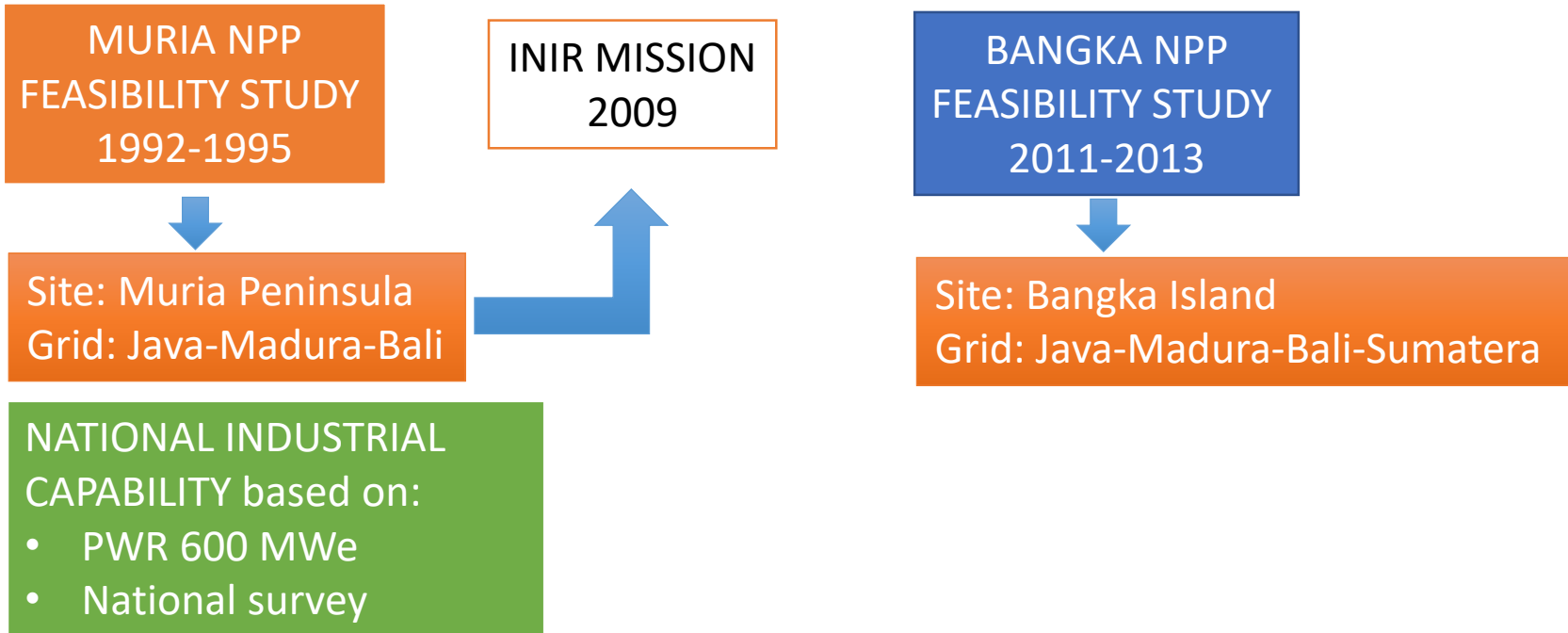
To be updated/improved



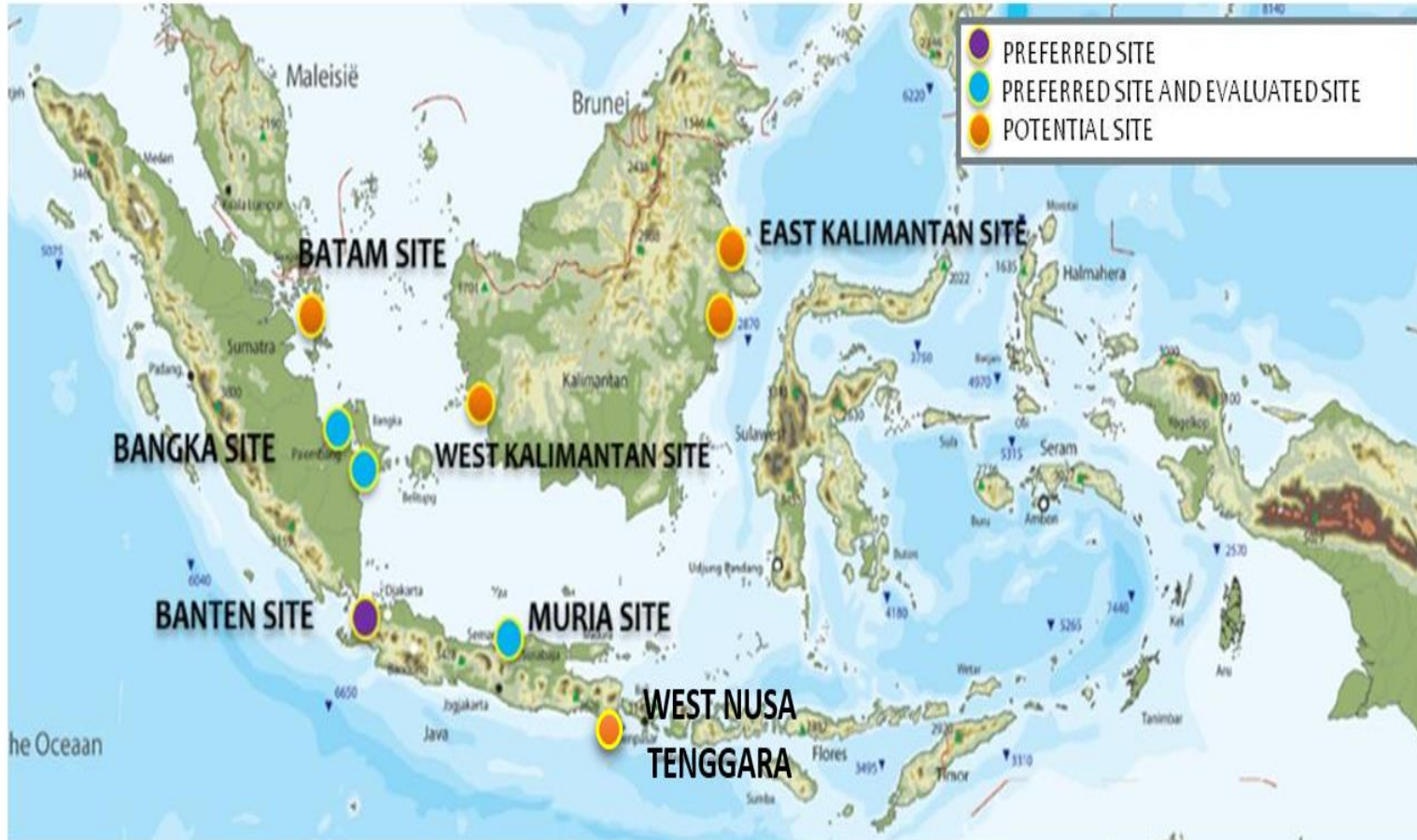
Functional, being implemented, available

INDONESIA NPP PROGRAM





Site Study for NPP



Study	Year	NPP Type	Local Content (%)				
			Unit 1&2	Unit 3&4	Unit 5&6	Unit 7&8	Unit 9&10
NewJec	1994	PWR	25	30	35	60	Optimum
MHI-WH	1996	AP600	31	60		-	-
GE	1996	ABWR	26,1	31,4	37,5	60	Optimum
KEPCO	1997	KSNP1000	25	40		60	-
UGM	2004	OPR1000	25	-	-	-	-
KHNP	2006	OPR1000	20	50		70	
BATAN	2014	HTGR 3 MW	30				

Note: around 75% is civil work

Criteria:

- Experiences: has experience in constructing of conventional power plant or chemical plant
- Production capacity
- Code and Standard
- Human resources
- Investment/capital

National Company could support for Nuclear Power Plant Construction (EPC):

- Have many experiences as Main EPC Contractor for Coal Fired Steam Power Plant with capacity < 300 MW
- Have experiences in collaborating with Foreign EPC Contractor in large capacity ≥ 600 MW

INVOLVEMENT NATIONAL EPC COMPANY IN EPC STAGE

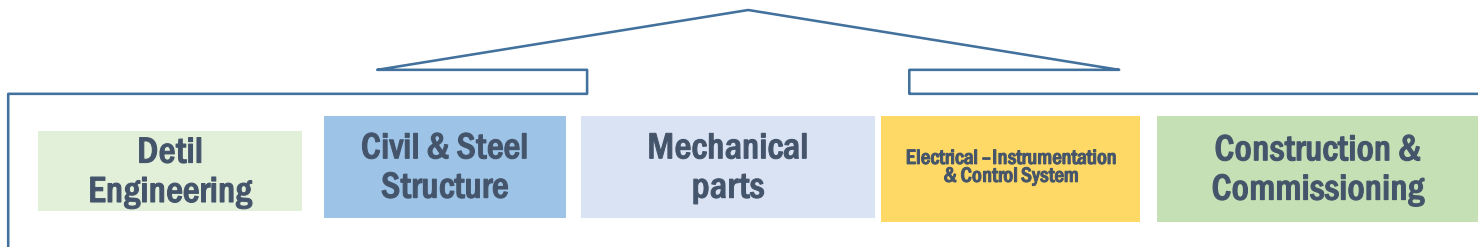
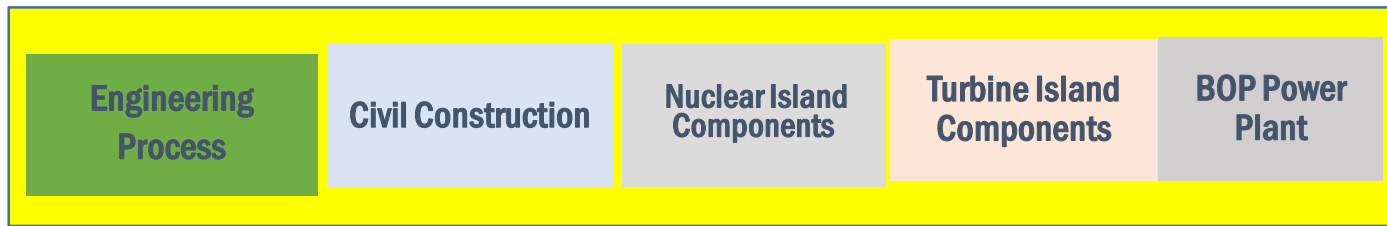
No	Scope	Basic Design	Detail Design	Procurement	Construction	Commissioning
1	NSSS	-	-	-	●	-
2	Turbine Island	●	●	●	○	●
3	Balance of Plant	○	○	○	○	○
4	Substation & Transmission Line	○	○	○	○	○
5	Civil Work	○	○	○	○	○

- Major Involvement
- Minor Involvement

- National EPC Company could support for civil work of NSSS and Turbine island scope in collaboration with International EPC Company
- For the NPP project with capacity < 300 MW, BOP, Substation/trms. and Turbine Island scope will be major involvement by National EPC company excl. commissioning work

NUCLEAR POWER PLANT PROJECT

National Supporting Industries



Engineering Company

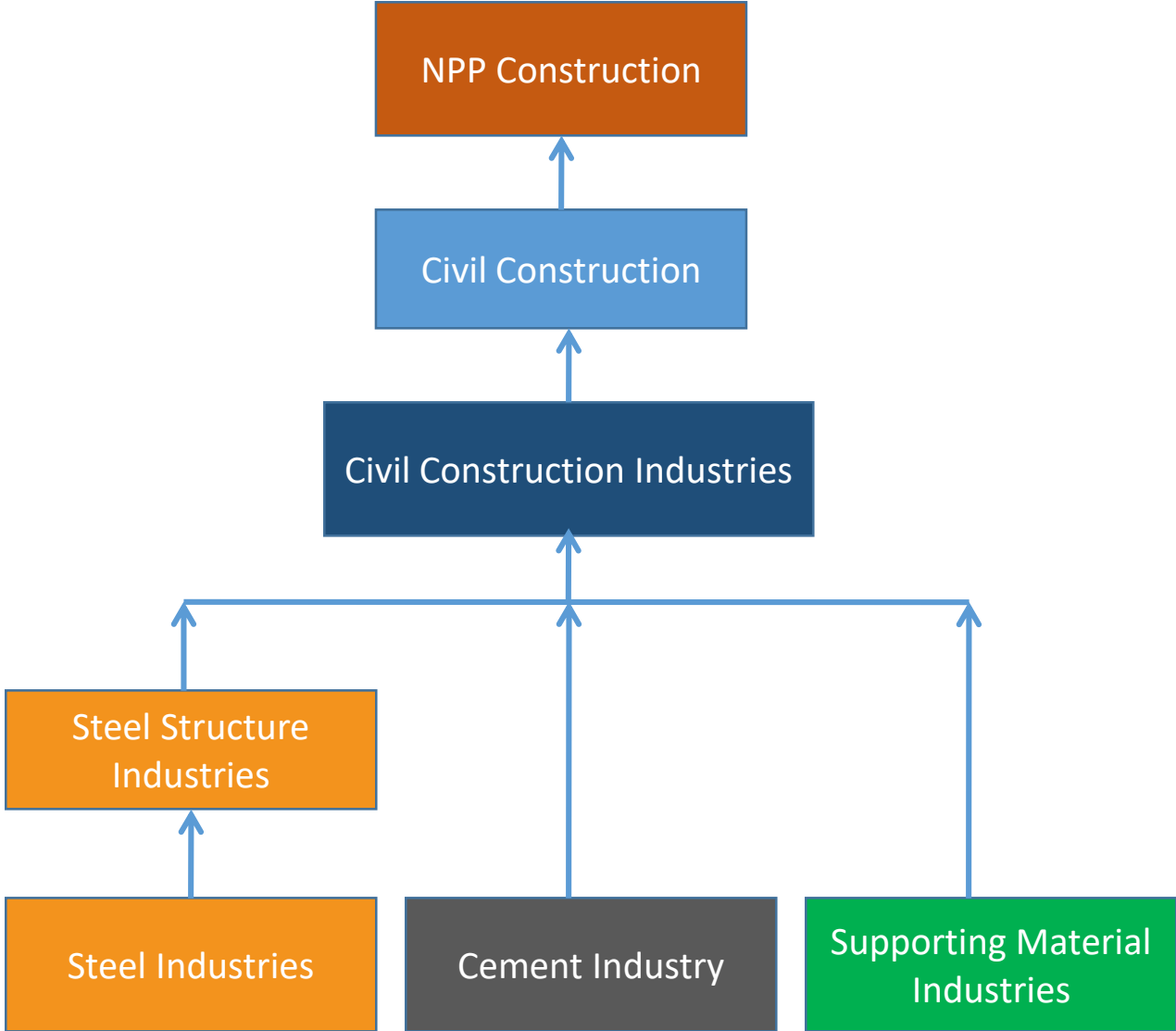
Civil Construction Company

Mechanical Company

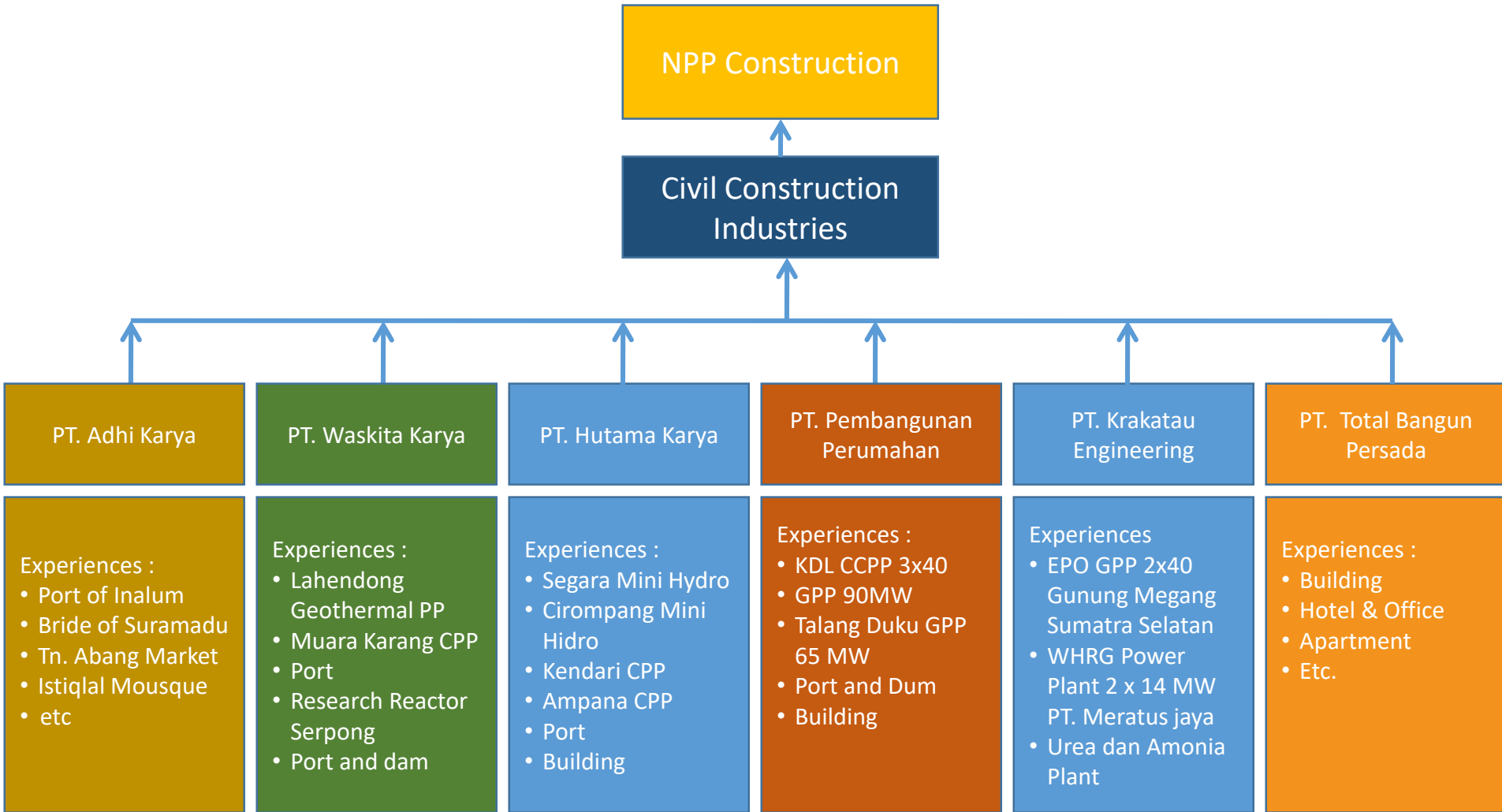
Electrical Company

EPC Company

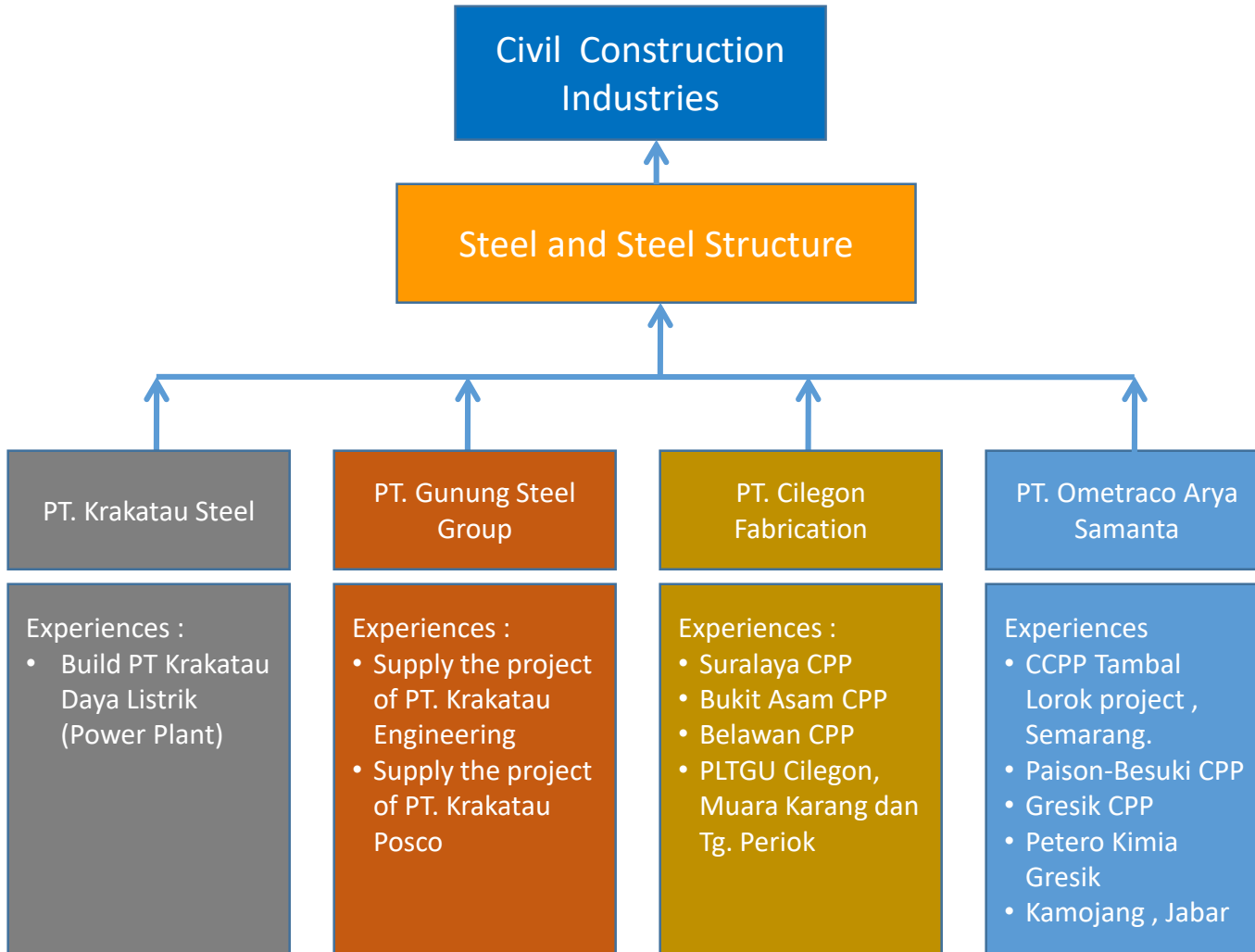
Supply Chain of Civil Work



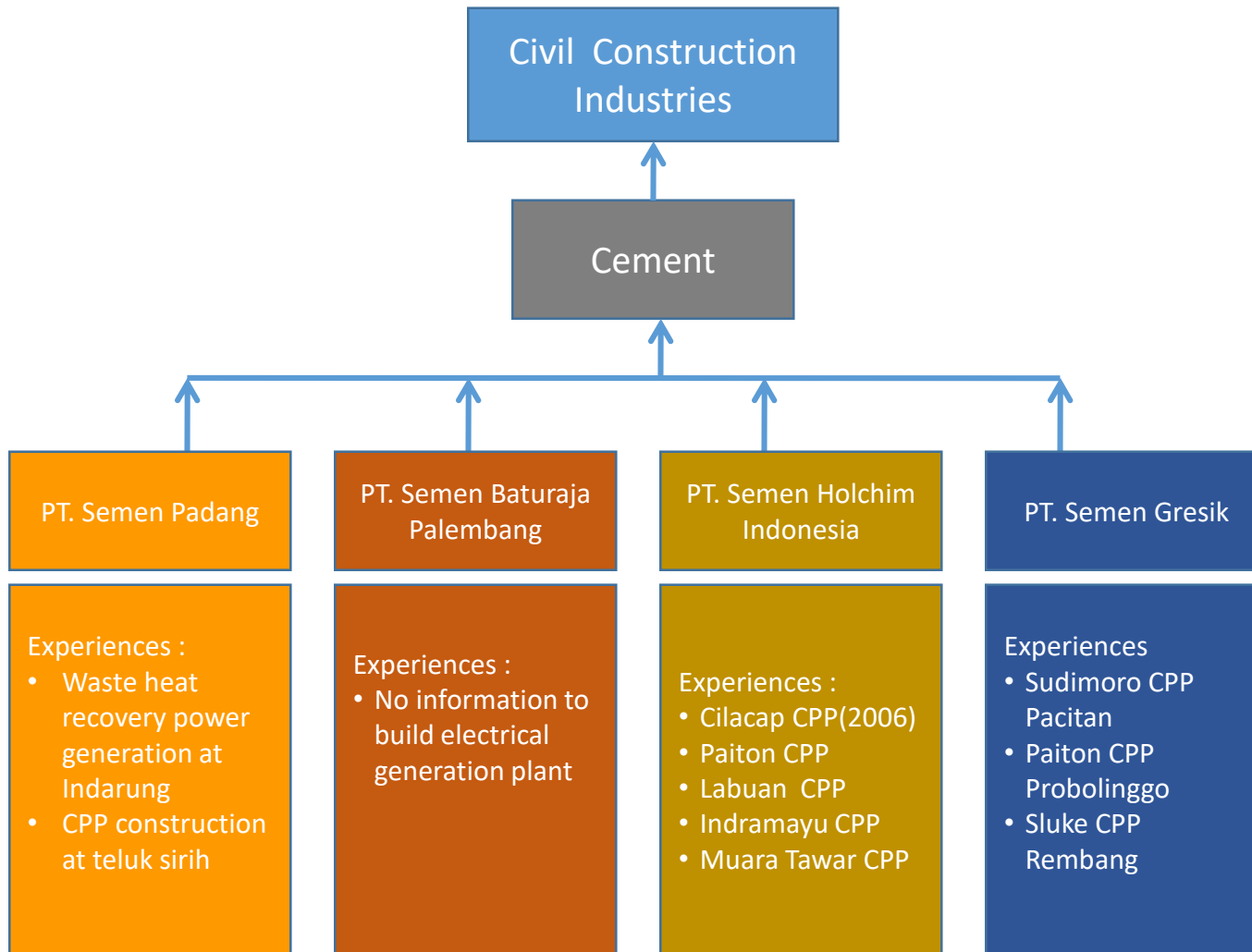
Supply Chain of Civil Work



Supply Chain of Civil Work



Supply Chain of Civil Work



Conclusion



- Potential Industries has been identified based on criteria to participate in the construction of new nuclear power plant
- National have many experiences as Main EPC Contractor for Coal Fired Steam Power Plant with capacity < 300 MW
- National EPC Company could support for civil work of NSSS and Turbine island scope in collaboration with International EPC Company
- Supply chain, especially on civil work, has been identified to ensure sustainability of supply

Thank you





BADAN TENAGA NUKLIR NASIONAL



Jl. Kuningan Barat, Mampang Prapatan Jakarta, 12710



(021) 525 1109 | Fax. (021) 525 1110



humas@batan.go.id



Humas Batan



@humasbatan



badan_tenaga_nuklir_nasional



Humas Batan