



Communication package #2

p2w: Functional empowerment
in Generation

Validation phase started

Dusseldorf, March 24, 2009, Project team

Agenda

Objectives for new generation

Setup of functional fleet management

Setup of NBU/Engineering

O&M: Case for change

Areas for improvement in current setup



Advantages from fleet cannot be realized

- Consensus driven decision making by smallest denominator in committees
- Weak accountability/responsibility of generation management for fleet targets



CoC lacks impact beyond transparency

- Detached from local asset management
- No cross MU management support
- Predominantly information hub
- Standardization, strategy and target setting dominated by MU/BU
- Europe.on goals not achieved



Vague functional reporting lines

- No dedicated heads of committees
- Reporting via MU participants

Benefits from new functional target setup



Value added by utilizing technology-specific synergies across MUs through GFM/FMCs; e.g.

- Consistent maintenance strategy
- Realizing the best projects in technology-specific fleet
- Operation as one portfolio with an improved risk management profile
- Best practice sharing and plant improvements within technology-specific fleet
- Common strategic spares mgmt.



Additional value added by utilizing cross-technology and cross MU synergies through XGFM; e.g.

- Cross-technology and cross-MU budget allocation and investment planning
- Contract/supplier mgmt. across MUs and technologies
- Integrated development of FFM units

NBU/Engineering: Case for change

Areas for improvement in current setup

-  **Decision processes hampered due to redundancy in steering at CC and EEA**
 - Slower processes and redundant resources
-  **Focus on CE, further opportunities for cross MU cooperation**
-  **Project management capabilities cannot be rolled out to group, esp. other technology types**
-  **Potential improvement opportunities for EEN/NBU interface**
-  **Maximize the synergies between our NBU and EEN businesses**

Further benefits through target setup

-  **Ensure KPI-Targets for NNE through continuous improvement process**
-  **Leverage synergies between project organizations across all MUs and technology types**
-  **Raise quality and efficiency of project management through experience curve effect and standardization**
-  **Maintain life-cycle performance of plants through incorporated operational view and expertise, leverage the shared infrastructure**
-  **Utilize scale effects across all MUs, technology types and projects, including strategic overall sourcing**

Agenda

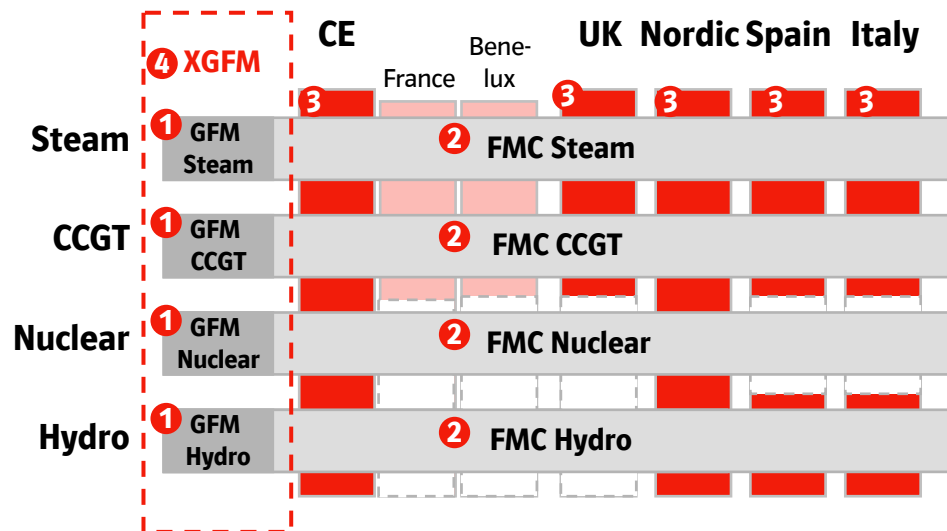
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Roles of key functions as first draft for discussion

Basic structure new Functional Fleet Management



Basic roles

- 1** GFM: Accountable for the success of a technology-specific fleet across MUs.
- 2** FMC: Responsible for the success of a technology fleet across MU and BU. Creating value added through increased cross MU synergies and continuous improvement within the technology.
- 3** MU/BU: Key role for securing operational success and development (e.g., Country specific guidance and service provision, stakeholder management and project development)
- 4** XGFM: Ensuring that cross technology synergies are achieved (e.g., common maintenance contracts and cross technology development of senior managers)

Role description MU/BU within generation

Strategic role - understand market demand and development

- Understand and track the development of its market place
- Identify opportunities to optimize the value on the market
- Develop best options within each generation technology and propose new build options in line with group strategy

Day-to-day operation

- Owns the plants, holds the operational licenses and operates the plants (incl. basic maintenance)
- Employer of the plants' staff, recruits plant staff
- Ensures high performance operation, maintain/train the competencies of the plants' staff and implement FMC guidance
- *Operation will be done locally, steering and reporting line yet to be decided*
- Supports day-to-day operation by ensuring compliance of plants' operation with all country specific requirements through providing central resources for safety related, legal or environmental issues.
- Supports and coordinates plants by sharing central services and know-how in the areas HR, accounting and IT
- Interaction with FMCs
 - Collaborate with FMCs to meet all relevant market and country specific requirements
 - Share fleet's success with FMC through joint KPI-targets
 - Support the FMC by sharing central services and know-how in the areas HR, accounting, legal and IT (only MU with FMC)

Stakeholder Management

- Responsible for in all kind of permitting questions and regulatory affairs (face to the authorities)
- Responsible for national/regional stakeholder management, e. g., communication with politicians, regions, municipalities, be the face to the trade unions and handles local incidents like protests and complaints

Role description of GFM/FMC

Accountability for the success of the fleet

- Responsible to leverage maximum value across MUs within a specific technology (e.g. CCGT) by taking full advantage of cross-MU synergies mainly from
 - Identifying the best projects group wide by challenging the plants' proposal and performing project prioritization within a specific technology
 - Governance in allocating CAPEX to the best projects within a specific technology
 - Providing central technical expertise
 - Fleet wide contractor and supplier management
- In charge of technology specific generation budget
- Accountable to deliver the in-year target for a technology specific fleet

Strategic role

- Take full advantage of MUs market know-how and propose options to promote the fleet's development
- Define generation's MTP targets and relevant KPI targets
- Provide operational governance, e.g. central outage planning
- Define the maintenance strategy

Support of the fleet's operational performance

- Motivate plants to take ownership in promoting the fleet's success by close involvement in continuous improvement
- Monitor and assess plants' performance with the aid of KPIs
- Take ownership and promote the continuous improvement process
- Set standards and implement best practices ("bring the paper to the plant")
- Address resources to the best projects, e.g. minimize risk in project through seconding experts to dedicated projects
- Support plants in big refurbishment projects by sharing experience from project execution in other MUs
- Optimize strategic spares management

Role description of XGFM

Accountability for the success of the fleet across technologies

- Responsible to leverage maximum value across MUs and across technologies by
 - Managing contracts/supplier fleet wide
 - Performing project prioritization within across technology
 - Reduce overall contingency of the generation's project portfolio
 - Single point of accountability for generations budget planning and allocation
- Help to maintain cross-technology synergies within the MUs

Strategic role

- Escalation body for GFMs
- Counterpart for CC strategy department

Allocation of processes follows clear rationale

Ownership	Process within overall process model	Rationale
MU/BU	• Political/public relations • Permitting and regulatory affairs • Crisis management • HR, accounting, IT, legal • Health, safety & environment • Demand analysis, project development new build • Day-to-day plant operation (plants' O&M, local embedding of sites) • In year performance delivery of FMC targets (plant targets)	Retain local key factors of success like country specific know how and guidance / stakeholder management / local relations / market knowledge /within MU synergies
GFM/ FMC	• Operational governance / steering • Maintenance strategy • Plant optimization • Continuous improvement, plant assessment • MTP, KPIs, investment planning (tech. specific) • Risk mgmt. and project prioritization across MUs (tech. specific) • Contract/supplier management (technology specific)	Utilize technology specific key factors of success , taking advantage of X-MU synergies, mainly from scale effects, central technical expertise and from forming an improvement culture
XGFM	• Contract/supplier management (X-technology) • Risk mgmt. and project prioritization across MUs (X-technology) • Budget/investment planning (X-technology)	Utilize X-technology synergies taking advantage of buying power, risk diversity and options for CAPEX allocation

Allocation of responsibilities require structured co-operation

Compilation of activities from different sub-processes

Activity	Organizational Unit				Comments
	XGFM	GFM/FMC	MU/BU	Power Plant	
Plant failure < 12h		I	I	A R	Core competence of plant's staff, PM's inform market (EET) to ensure price optimization
Major boiler failure / Turbine damage		A	I	R	Decision needs alignment with spare part mgmt/resource mgmt/CAPEX prioritization, PM's inform market (EET) to ensure price optimization
Permits and regulatory affairs		I	A R	C	Local core competence and responsibility (Nuclear regulation requires central alignment)
Financial planning (MTP/Budget)	A	R	I	C	EBIT-targets involve several responsible bodies and stakeholders including EET

Responsible
 Accountable
 Consultation, support
 Information

Criteria for evaluating options derived from FFM vision

1. **Clear accountabilities**

Organizational model needs to provide clear accountabilities and allow fast decision making and steering (faster than today); non-clear accountabilities and interfaces between functional and MU will lead to drawbacks in this dimension

2. **Cross MU Synergies**

The main reason behind stringent functional empowerment is to create additional value across MUs and BUs; this dimension is evaluating this capturing potential

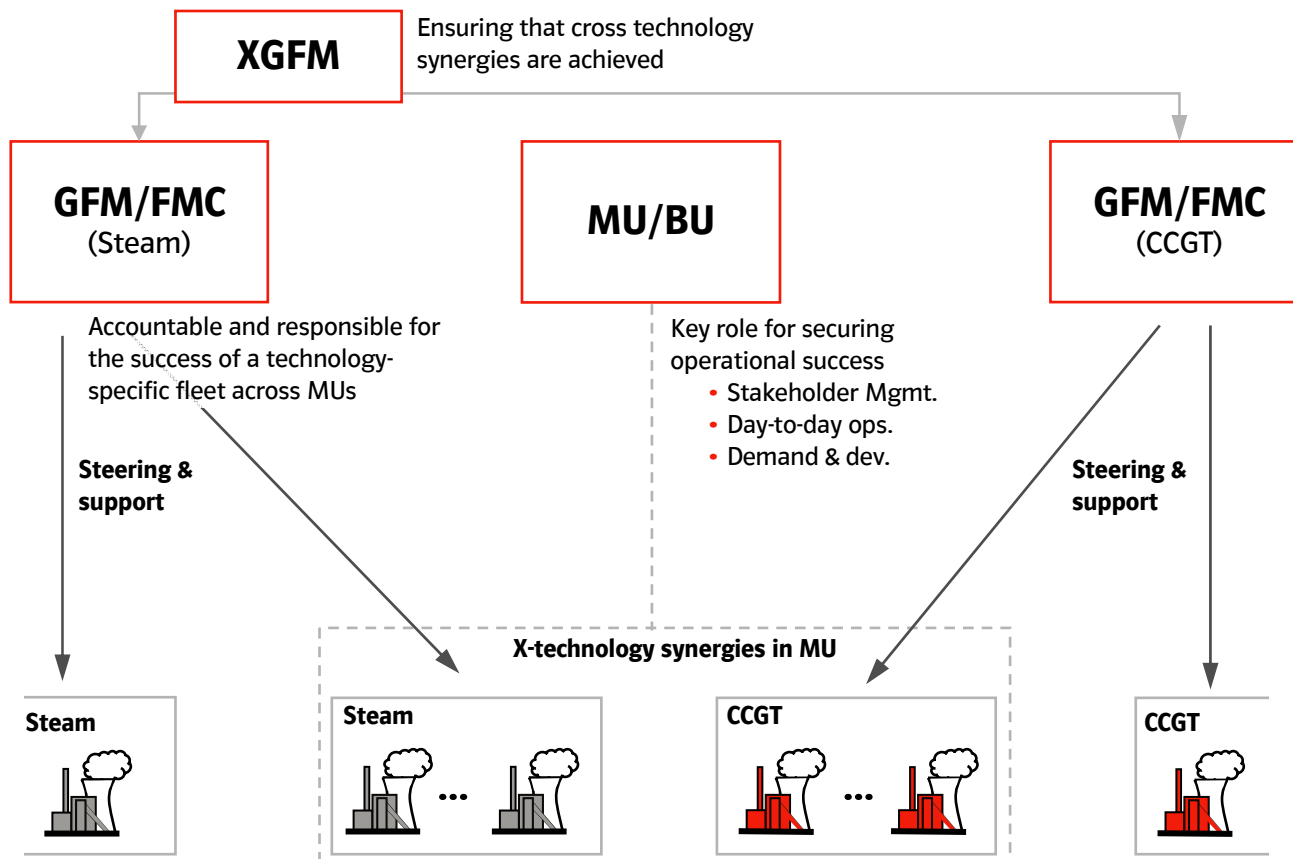
3. **Avoiding MU bias**

New functional structures should seek to achieve the fleet optimum and not focus on certain MUs; in order to reach this any bias across MUs needs to be avoided

4. **Maintaining local synergies**

New functional structures might have an effect on currently utilized synergies; losing these synergies should be avoided as far as possible; this dimension is evaluating the ability to maintain local synergies

Extend of steering and support from GFM/FMC to be defined



? Guiding question

Degree of functional steering
"Which degree of functional steering is necessary to utilize functional synergies?"

Agenda

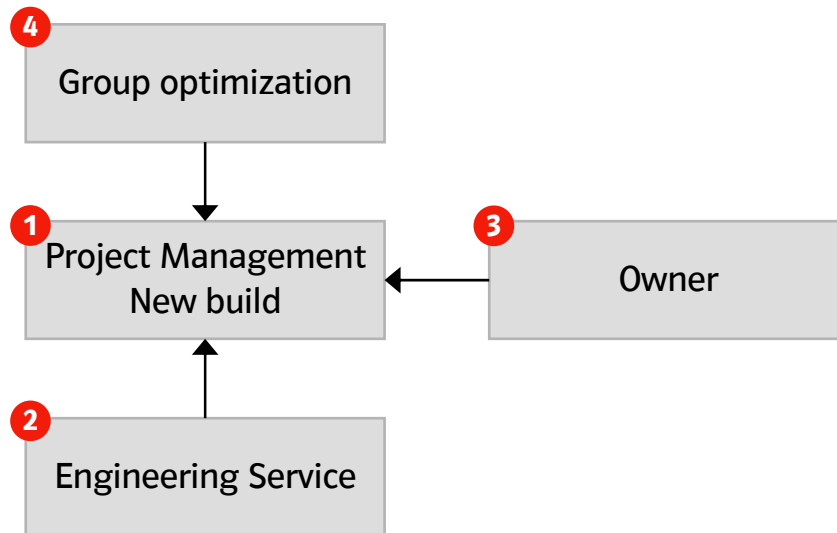
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Four generic functions in new build business, each with clearly allocated roles

Key functions of new build business



Basic roles regarding new build

- 1 **Project Management:** Accountable and responsible to manage construction of new build projects by meeting budgets, deadlines and quality and minimizing risks
- 2 **Engineering Service:** Support project management in achieving project goals by developing and maintaining technical expertise and developing technical concepts
- 3 **Owner:** Develop projects including managing investment decision, handle external stakeholders, operate plant
- 4 **Group optimization:** Develop portfolio, set generation strategy, take investment decision, controlling and steering of performance improvement of new build fleet (e.g. by monitoring KPIs)

Key challenge: Target E.ON group optimum for every key decision between functions (conflict of interest, resource allocation, etc.)

Potential from EEN/NBU-cooperation not fully utilized

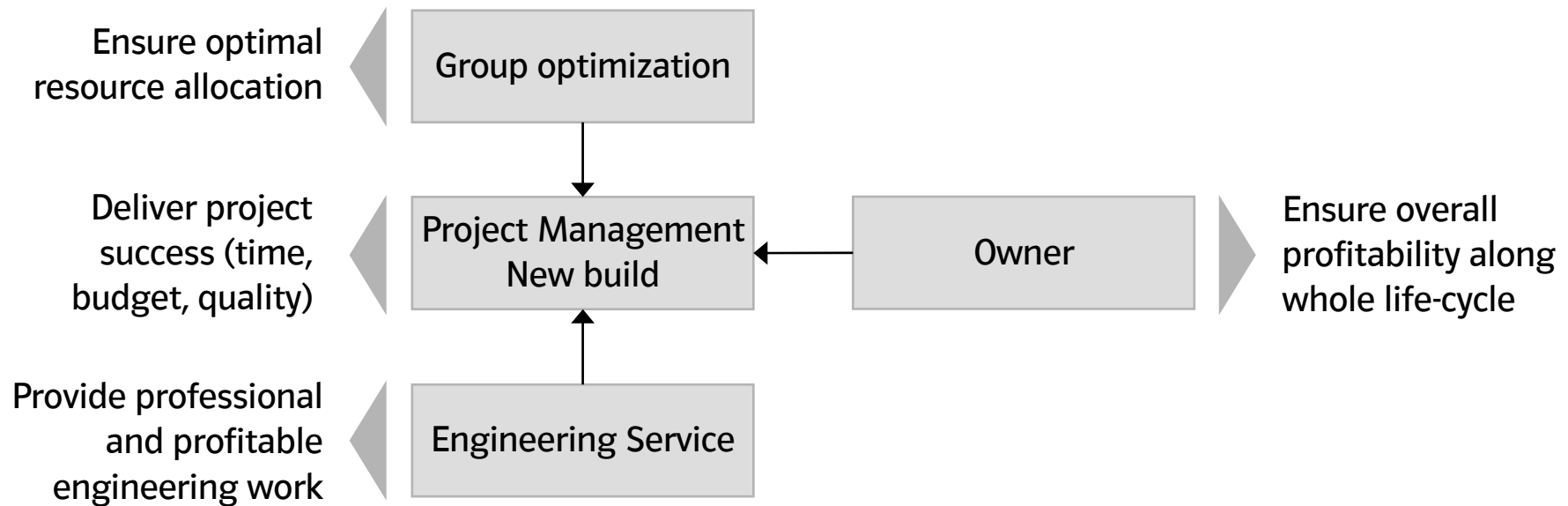
Envisioned allocation	Responsibilities & accountabilities	Current allocation
Project management	• Owner's service provider for new build plants • Project steering and controlling • Provide best practice processes and tools for new build management • Delivering projects in budget, time, quality with focus on NPV • Technical, commercial and construction site project management • Project procurement, claim, risk management and mitigation • Quality management	NBU
Engineering Service	• Quality assurance, expediting & inspection • Technical part of contract/claim management incl. specification • Consultancy, master planning, studies, modeling & simulation • Conceptual design, basic and detail engineering	EEN

Key challenge: Project management and engineering service can share responsibilities – but then clear understanding of their roles is key

Unclear allocation of tasks at EEN/NBU interface shows significant lever for improvements

Example for problem	Root cause	Solution
Datteln has faced severe quality issues in the past. Especially the boiler (steel works, ducts and pressure parts) caused extreme time delay and extra cost.	Despite the short coming of the manufacturer an in-house appropriate QA responsibility is not clearly addressed to either EEN or NBU.	Set up an own "early warning system" by clear responsibility within one organization. Avoid double functions in EEN & NBU.
Reaching service contract agreement with EEN is difficult (Example 'Malzenice', 'Gönyü': regulation about budget overruns could not be found for a long time)	Current setup leaves too many degrees of freedom for negotiation of responsibilities in NBU-EEN contract	Revise interface between NBU and EEN to handover clearly defined work packages
NBU GPM is missing technical support for his project (Datteln: late deliveries of planning documents due to high number of only partly involved parties).	Conflict of interest in resource allocation	One steering of resource allocation by group optimum

Each function in new build business follows a natural target



Key challenge: Align organizational steering and incentives with addressable value levers of each key role

Three key challenges must be accounted for in new NBU/EEN setup

Key challenges

- Assign natural key roles in new build to a clear cut of organizational subunits
- Target E.ON group optimum for every key decision (conflict of interest, resource allocation, etc.)
- Align organizational steering and incentives with addressable value levers of each key role

Key changes of new setup

Revision of interface
of NBU and EEN, to ensure clear role assignments

and

Installation of joint steering
of EEN and NBU to ensure group optimum

Key changes can be implemented in different structural setups

e-on

Back-up

Backup CE without Benelux and France (counted units)

Steam		CCGT/OCGT	Nuclear
Datteln 1	Buschhaus	Kirchmöser	Isar 1
Datteln 2	Schkopau A	Obernburg	Isar 2
Datteln 3	Schkopau B	Burghausen	Grohnde
Heyden		Jena Süd	Unterweser
Kiel	Franken 1	Kirchlengern	Grafenrheinfeld
Knepper	Franken 2	DKCE	Brokdorf
Scholven B	Irsching 3	Kirklareli	
Scholven C	Staudinger 4		
Scholven D		Huntorf	
Scholven E	Ingolstadt 3	Wilhelmshaven	
Scholven F	Ingolstadt 4		
Scholven FWK		<u>New builds</u>	
Shamrock	Otrokovice	Irsching 4	
Staudinger 1	Bialystok	Irsching 5	
Staudinger 2		Gönyü	
Staudinger 5	<u>New builds</u>	Malzenice	
Wilhelmshaven	Datteln	Plattning	
	Staudinger		
28 + 2		9 + 5	6
			+ X: new units after Gate 2

Backup Benelux (counted units)

Steam

Maasvlakte 1
Maasvlakte 2

New builds

Maasvlakte 3
Antwerp

CCGT/OCGT

Delft
UCML Maasvlakte GT
Den Haag GV15
Galileistraat FG1
Leiden LD12
RoCa 3

Nuclear

-

2 + 2

6

-

+ X: new units after Gate 2

Backup France (counted units)

Steam

Emil Huchet 4
Emil Huchet 5
Emil Huchet 6
Gardanne 4
Gardanne 5
Hornaing 3
Lucy 3

7

CCGT/OCGT

New builds
Emil Huchet 7
Emil Huchet 8

0 + 2

Nuclear

-

-

+ X: new units after Gate 2

Backup UK (counted units)

Steam	CCGT/OCGT	Nuclear
Ironbridge 1 Ironbridge 2 Kingsnorth 1 Kingsnorth 2 Kingsnorth 3 Kingsnorth 4 Ratcliffe-on-Soar 1 Ratcliffe-on-Soar 2 Ratcliffe-on-Soar 3 Ratcliffe-on-Soar 4 Grain 1 Grain 4	Castleford Connah's Quay 1 Connah's Quay 2 Connah's Quay 3 Connah's Quay 4 Cottam Dev. Centre Enfield Killingholme 1 Killingholme 2 Sandbach Stoke Taylors Lane GT2 Taylors Lane GT3 Thornhill Kemsley Winnington <u>New builds</u> Grain	-
12	16 + 1	-
		+ X: new units after Gate 2

Backup Italy (counted units)

Steam	CCGT/OCGT	Nuclear
Fiumesanto FS3 Fiumesanto FS4	Trapani TT1 Trapani TT2	-
Ostiglia OS4 Tavazzano TZ8	Ostiglia OS1 Ostiglia OS2 Ostiglia OS3 Tavazzano TZ5 Tavazzano TZ6 Livorno Ferraris LF1	
Fiumesanto FS1 Fiumesanto FS2	<u>New builds</u> Scandale 1 Scandale 2	
6	8 + 2	- + X: new units after Gate 2

Backup Spain (counted units)

Steam	CCGT/OCGT	Nuclear
Los Barrios Puente Nuevo Puertollano Cercs Escucha	Escatron Tarragona <u>New builds</u> CCGT Algeciras	-
5	2 + 1	-
		+ X: new units after Gate 2

Backup Nordic (counted units)

Steam

Bravalla
Karlshamn 1
Karlshamn 2
Karlshamn 3

Malmö Heleneholm

5

CCGT/OCGT

Halmstad G11
Halmstad G12
Öresundsverket G24
Öresundsverket G25

New builds
Öresundsverket CHP

4 + 1

Nuclear

Oskarshamn 01
Oskarshamn 02
Oskarshamn 03

3

+ X: new units after Gate 2

Backup Russia (counted units)

Steam

Berezovskaya GRES 1 Yaivinskaya GRES 1
 Berezovskaya GRES 2 Yaivinskaya GRES 2
 Yaivinskaya GRES 3
 Surgutskaya GRES-2 1 Yaivinskaya GRES 4
 Surgutskaya GRES-2 2
 Surgutskaya GRES-2 3 New builds
 Surgutskaya GRES-2 4 Berezovskaya GRES 3
 Surgutskaya GRES-2 5
 Surgutskaya GRES-2 6
 Shaturskaya GRES 1
 Shaturskaya GRES 2
 Shaturskaya GRES 3
 Shaturskaya GRES 4
 Shaturskaya GRES 5
 Shaturskaya GRES 6
 Smolenskaya GRES 1 AB
 Smolenskaya GRES 2 AB
 Smolenskaya GRES 3 AB

21 + 1

CCGT/OCGT

New builds
 Surgutskaya GRES-2 7
 Surgutskaya GRES-2 8
 Shaturskaya GRES 7
 Yajvinskaya 5

0 + 4

Nuclear

-

-

+ X: new units after Gate 2

Backup US (counted units)

Steam	CCGT/OCGT	Nuclear
Brown 1 <u>New builds</u> Brown 2 Trimble County 2 Brown 3 Cane Run 4 Cane Run 5 Cane Run 6 Ghent 1 Ghent 2 Ghent 3 Ghent 4 Green River 3 Green River 4 Mill Creek 1 Mill Creek 2 Mill Creek 3 Mill Creek 4 Trimble County 1 Tyrone 3	Brown 5 Brown 6 Brown 7 Brown 8 Brown 9 Brown 10 Brown 11 Paddys Run 13 Trimble County 5 Trimble County 6 Trimble County 7 Trimble County 8 Trimble County 9 Trimble County 10	-
18 + 1	14	-
+ X: new units after Gate 2		