



NorCap Project

Dec 20



FINGRID

Statnett



ENERGINET

Agenda

- Background
- Vision
- Project scope
- Project organization
- Project plan
- Project risk
- Appendix:
 - System landscape

Background

NorCap project is the system implementation of the Flowbased methodology which eventually will replace the CCC/CNTC methodology.

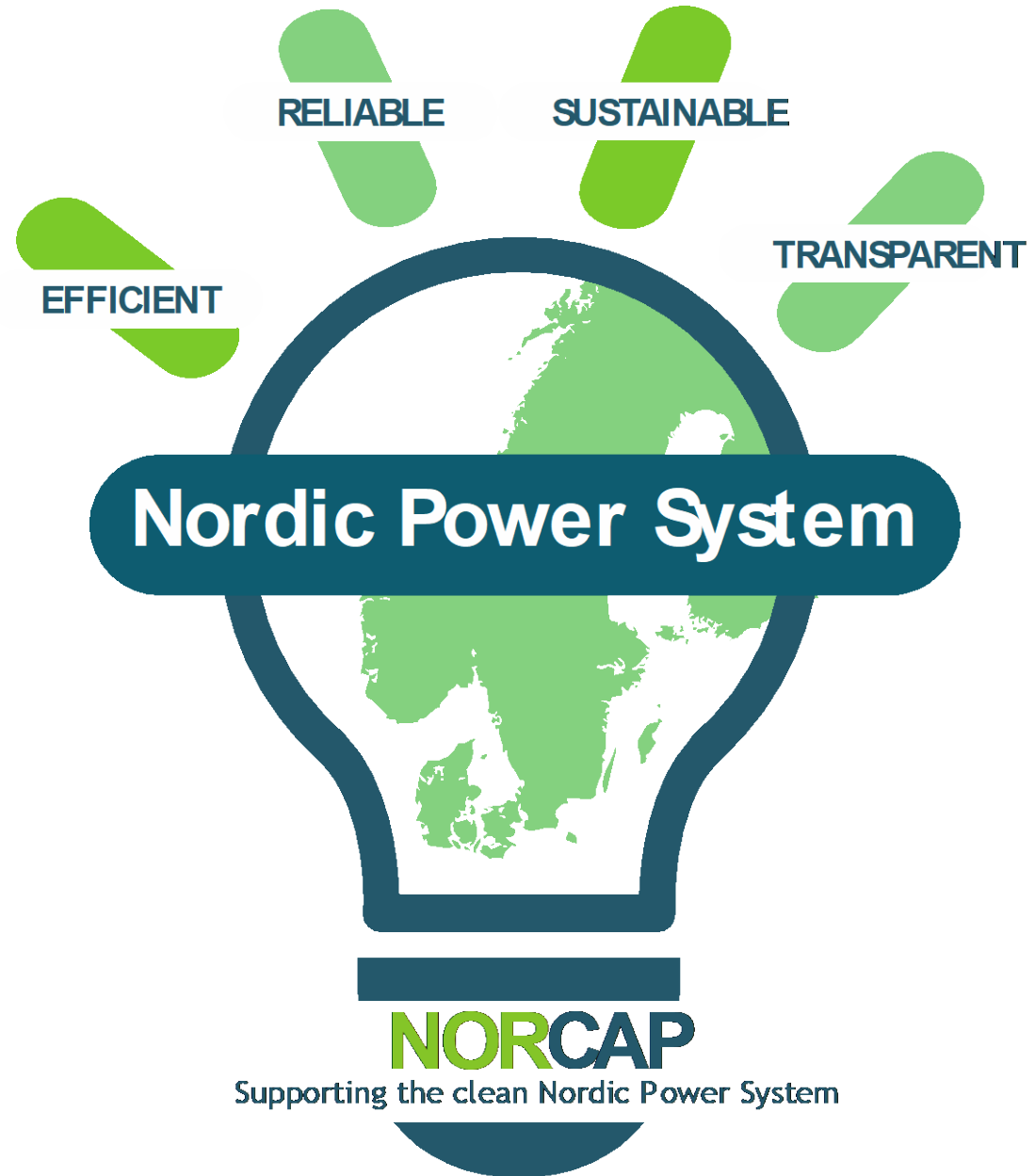
Summary of the original reasons for implementing the Nordic RSC project;

- Increase of renewables, *intermittent generation and highly variable inertia*
- Market integration and system integration, *stronger interconnections to other power systems*
- Adequacy challenge, *utilize the most efficient measures within the region or neighboring regions*
- Regulatory aspects, *European Commission centralization process*

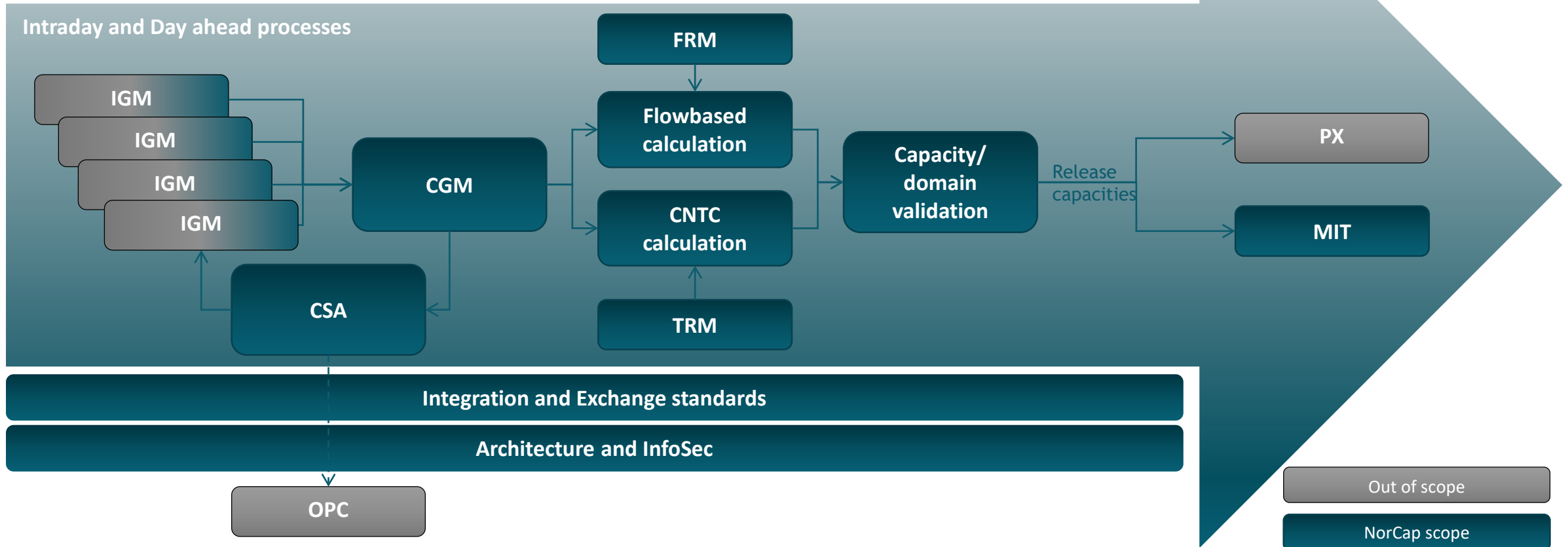
NorCap vision

NORCAP

- let's share data to enable
optimal efficiency of
the clean Nordic Power system



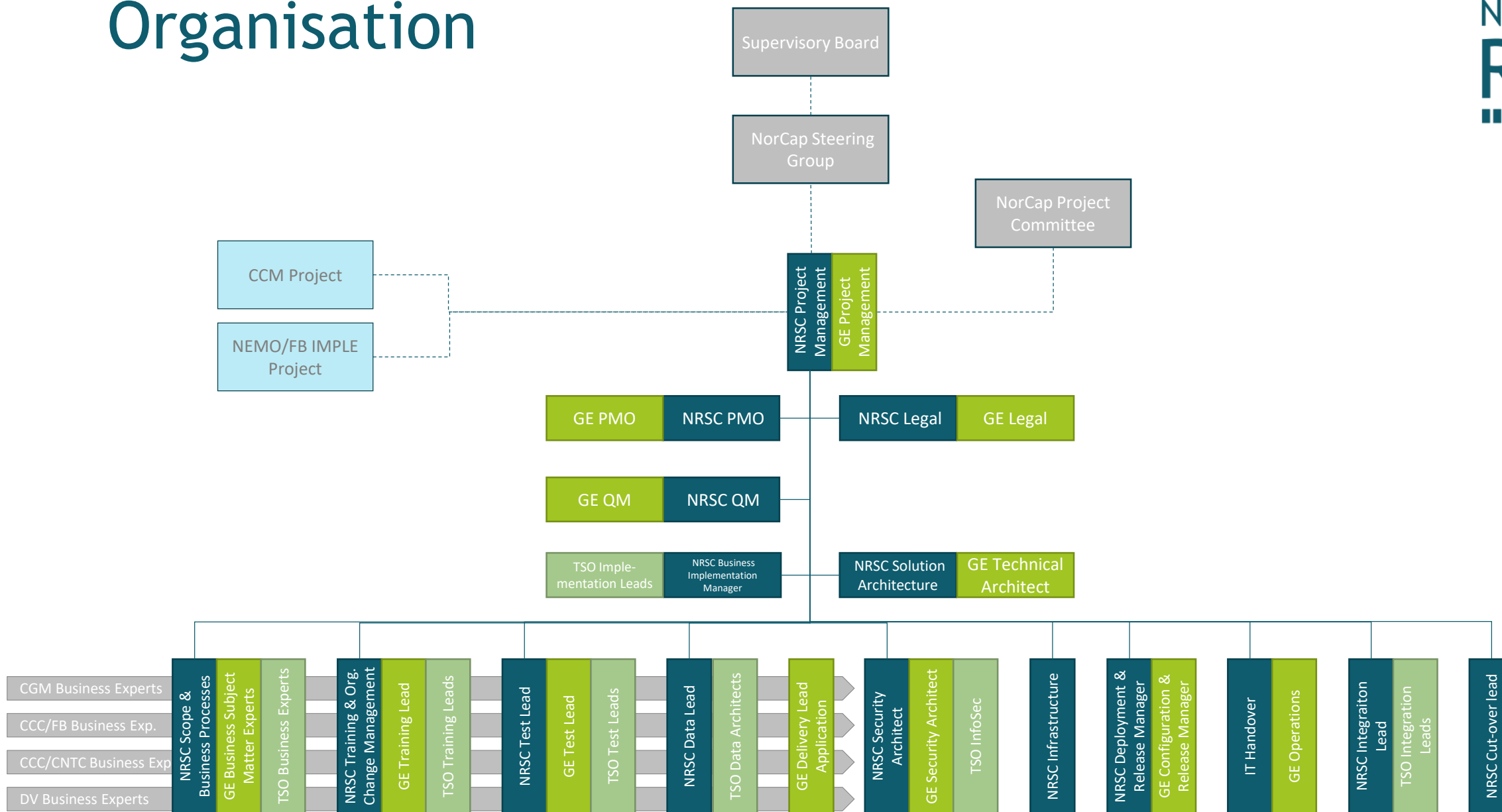
NorCap project scope



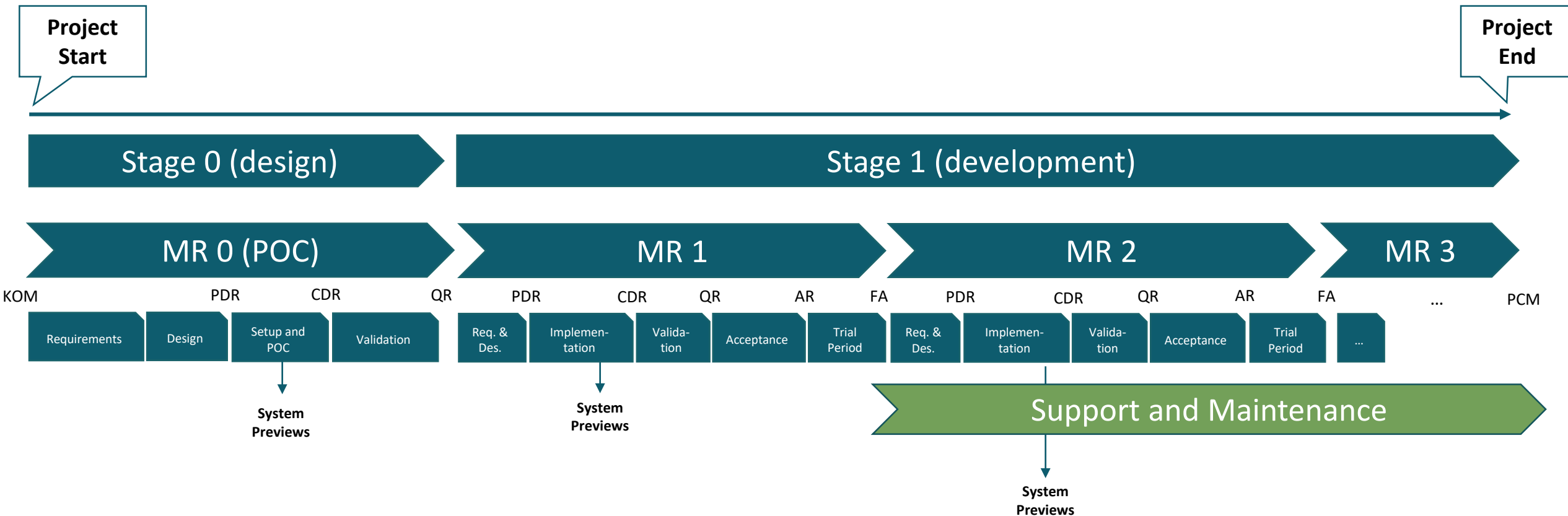
Scope in a Page : Level 0

Nordic RSC Service		Epics /High Level Business Process	MR1	MR2	MR3	MRx/Descoped
CGM Service Common Grid Model		IGM and CGM Creation and validation (CGM-EP1-3)	(D-2)	(D-2) (D-1)	D-2 D-1	ID ,OS Y-1, M-1, W-1
		Fall-back Process (CGM-EP1)		(D-2) (D-1)	D-2 D-1	ID
		European Merging Function EMF			D-2, D-1	ID, Y-1, M-1, W-1
		Single Line Diagrams ()				D-2, D-1 ID, OS, Y-1, M-1, W-1
CCC Service	FB Flow Based Calculation (method 1 of CCC)	Input Data Validation, Preparation and Execution (CCC-EP1-3)	DA			ID (system calc.)
		Basecase Fref calculation based on AC Loadflow Flow-Based Calculation Execution based on AC Loadflow			DA	ID (system calc.)
		Fall-back Process (CCC-EP1)		(DA)	DA	ID (system calc.)
		Reliability Margins Calculations (FRM, TRM)				DA, ID
		Fmax Calculation for SE-FI Border			DA	ID
	DV Domain Validation	DV process (DV-EP1-4)	(DA)	(DA)	(DA, ID)	DA ID
	CNTC Coordinated NTC Calculations (method 2 of CCC)	Input data preparation, calculation preparation, calculation execution			(ID)	ID
		Fall-back Process ()			(ID)	ID
CSA Service (Coordinated Security Analysis)		Coordinated Security Analysis ()				D-1, ID
		Remedial Actions				D-1, ID
General functionality		Validate in Study Mode Module				CNTC, FB, CGM, RM
		Reporting		NRA KPI reporting	Data warehouse v. 1	Data warehouse v. 2
		Standing data module			CGM, FB, CNTC	CSA, RM

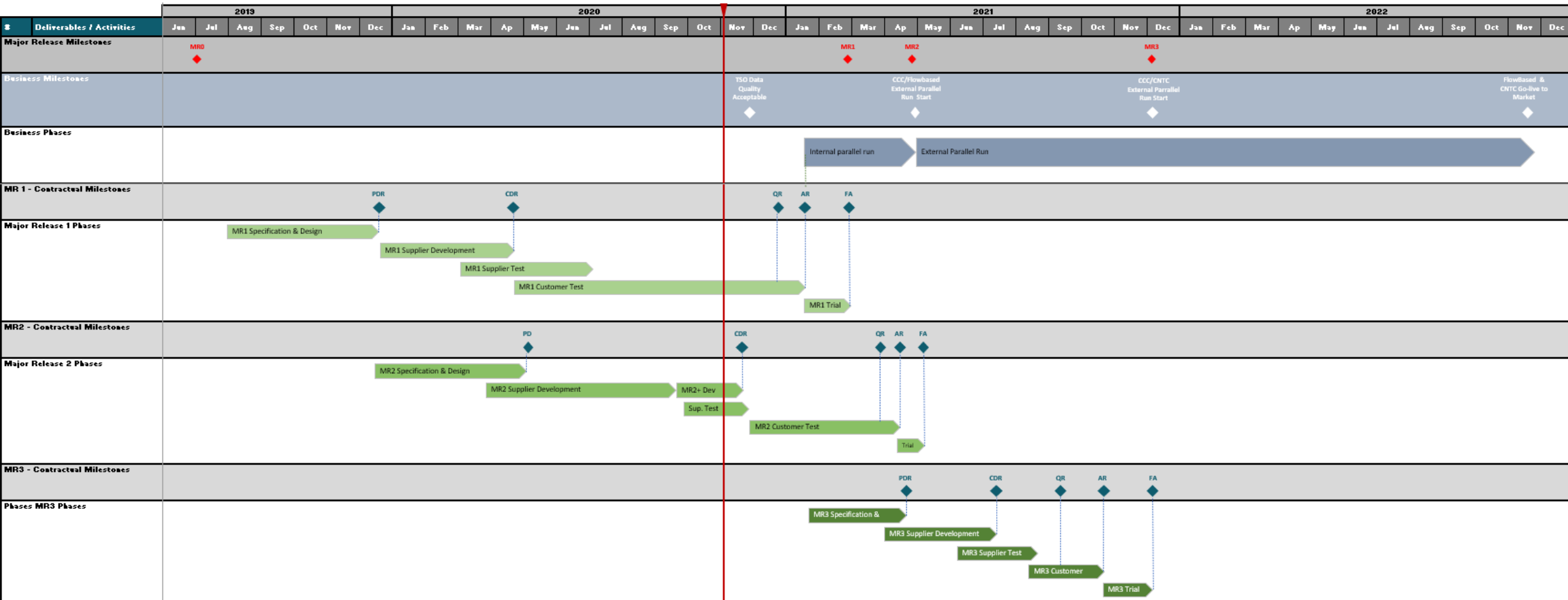
Organisation



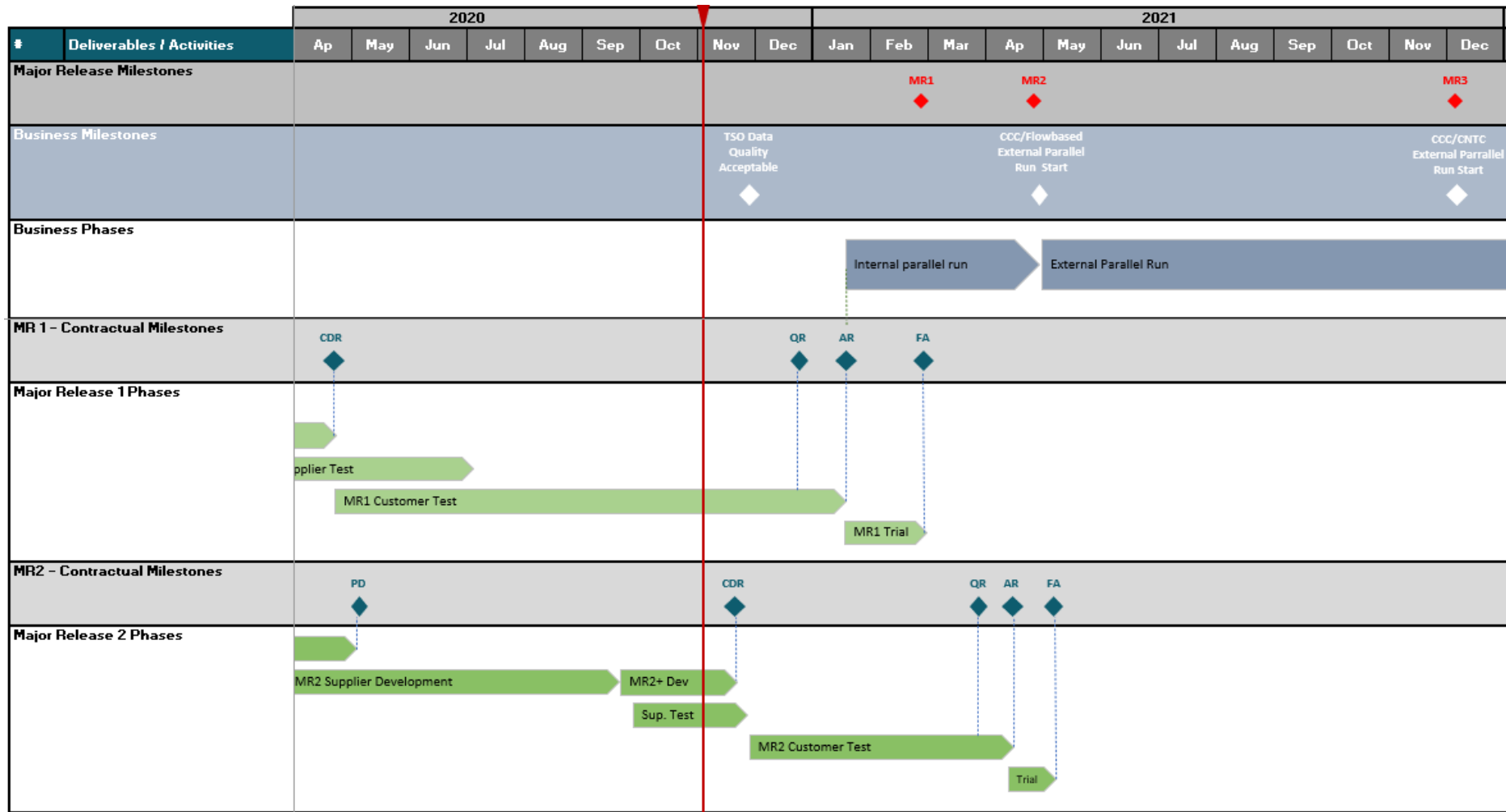
Delivery model



Project Plan (overall)



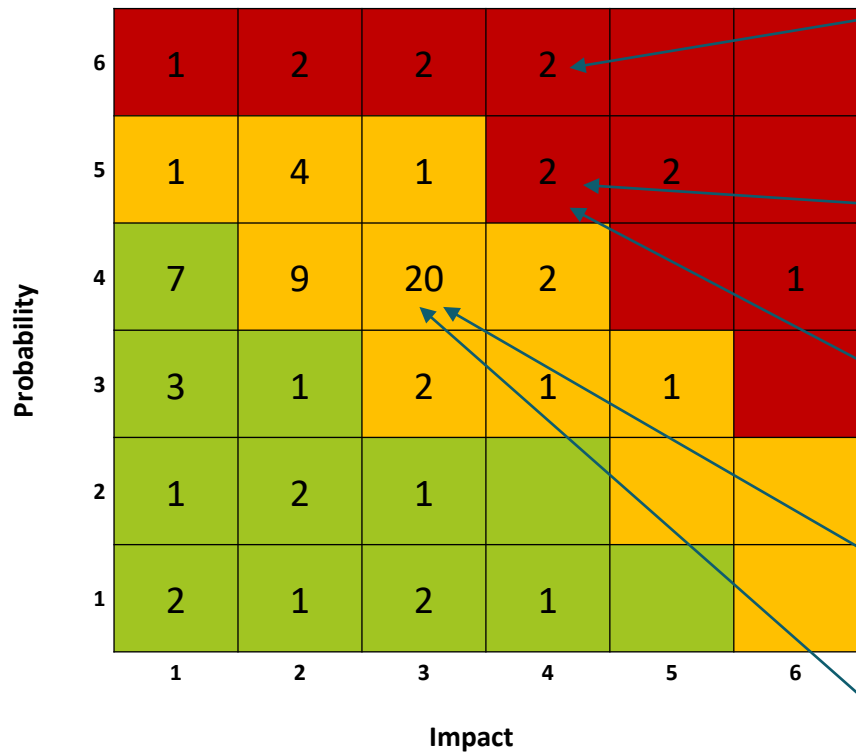
Project Plan (2020/21 view)



Project risk

Steering Group Level Risks (High impact and probability risks selected, open cases)

Risk Matrix (Total amount of non-closed Risks)



NB! Risk Matrix above shows amount of risks per impact and probability.

Total amount of open risks/issues are 74

ID	Risk description	Risk action	P	I
157	Calculation complexity Not being able to check the quality of the FlowBased calculations	Cause: Flowbased methodology, Grid complexity and multiple energy sources driving up the complexity in the calculations Impact: Delay of parallel run. Test verification and validation challenges. Unclear Definition of Done (DOD) and acceptance criteria and test/validation of CCM tool	6	4
189	Not-testable Test of complex calculations and expected results might be very difficult if not impossible.	Cause: The critical parts of the NorCap system is not testable or it is very difficult to test these parts. Impact: Difficult to interpret whether GE have delivered an acceptable solution to be approved by the Customer. Action: Identify some criteria's prior to starting the test, which will define whether the system works as it should, or corrections are needed	5	4
228	Unclear deliverables Makes it difficult to deliver and manage the project. Could result in the project does not meet its objectives	Cause: Unclear deliverables Impact: Project plan creation, Documentation, Test etc.	5	4
223	Complex multivendor environment causing misalignment May causing delays and rework.	Cause: Multiple foras, organizations, vendors, stakeholders etc. Impact: Misunderstandings, disagreements, slow down of project progress, complex solutions.	4	3
160	Calculation results are incorrect Flowbased methodology and supporting systems doesn't give trustful results	Cause: Quality of calculations/systems. Impact: Delay, lost trust in the calculations, project perceived a failure. Additional effort in the TSOs Poor data quality. Business rules are not stable etc.	4	3

APPENDIX

System Landscape

