

# Planning for Investments in Distributed Systems



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# HQ Divisions

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Generation HQP

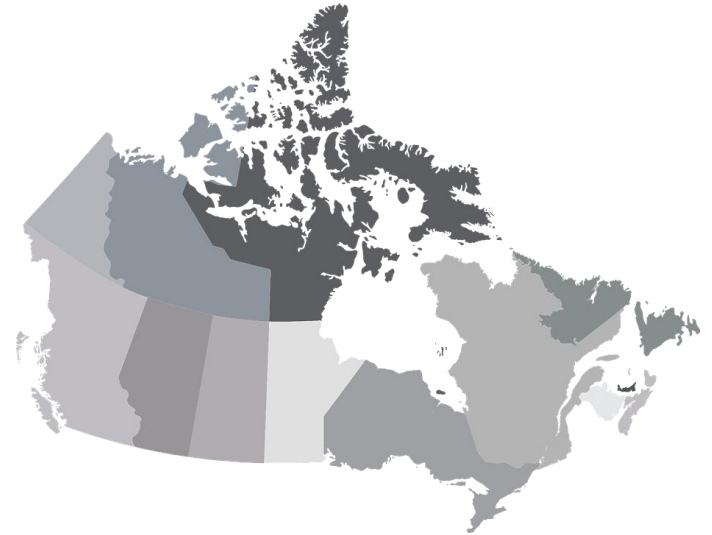


Transmission HQT



Distribution HQD

- Founded in 1944, Public
- 3 Divisions
- 63 Hydroelectric Power Stations
- 36912 Megawatts
- Total assets : 75 B\$



# HQ TransÉnergie (HQT)

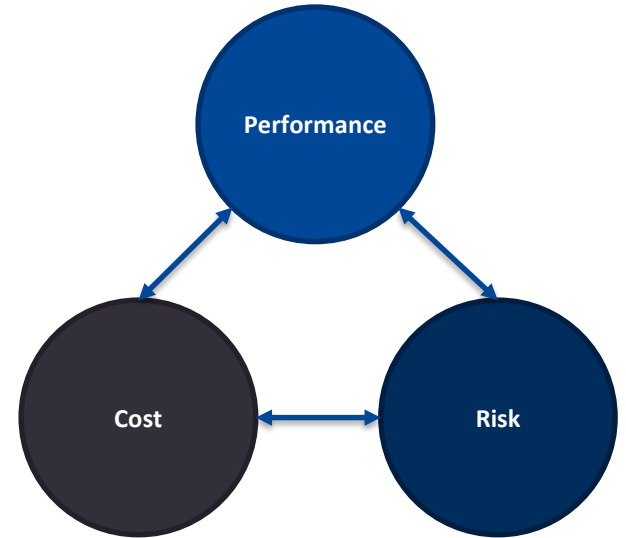
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## Resources:

- Nearly 3,000 employees
- Annual investment around \$2 billion

**Objective:** Ensure Grid Reliability and High Service Level by maintaining over than 750,000 facilities:

- Over 500 substations
- Over 30,000 km of lines



# (HQT) Evolving Context

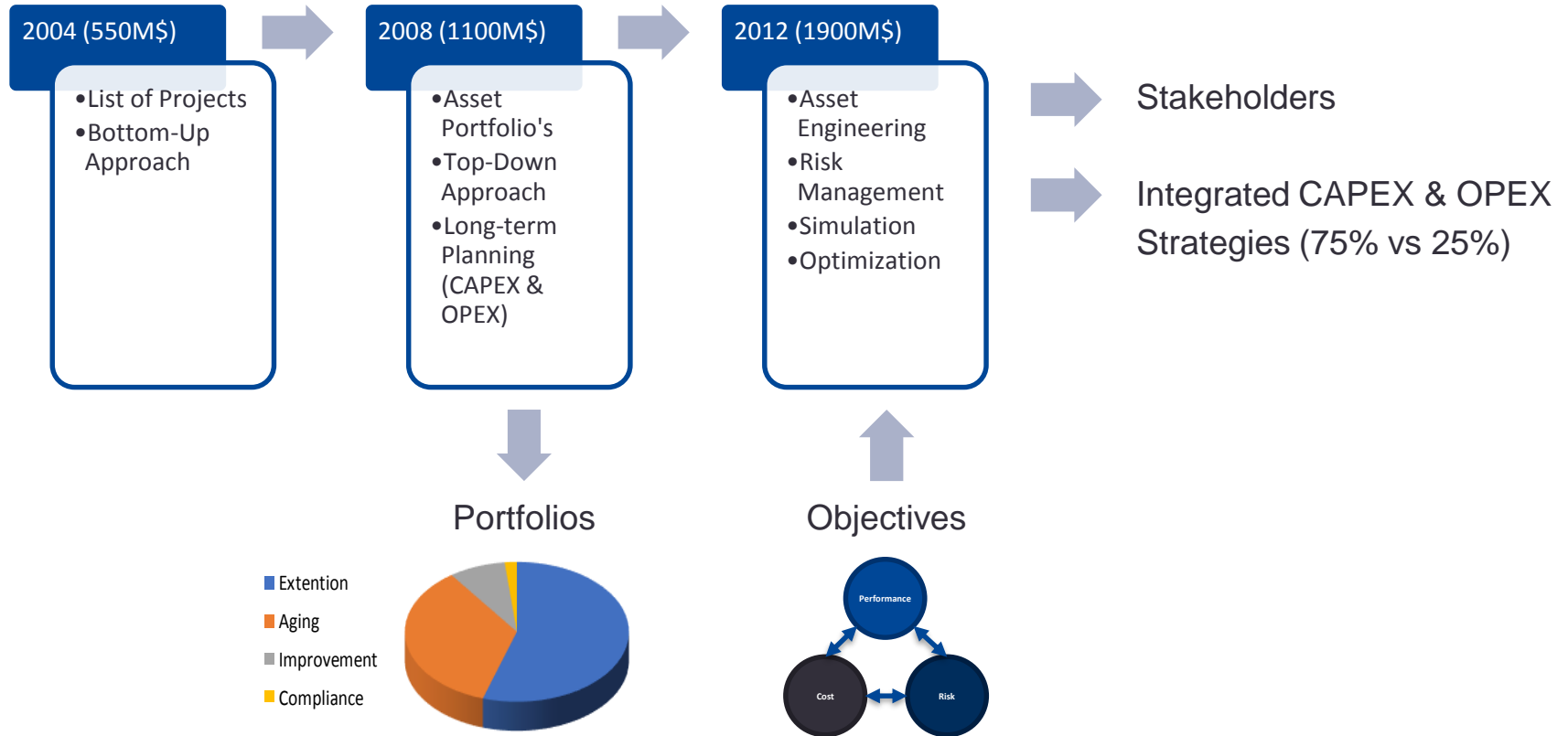
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## Issues:

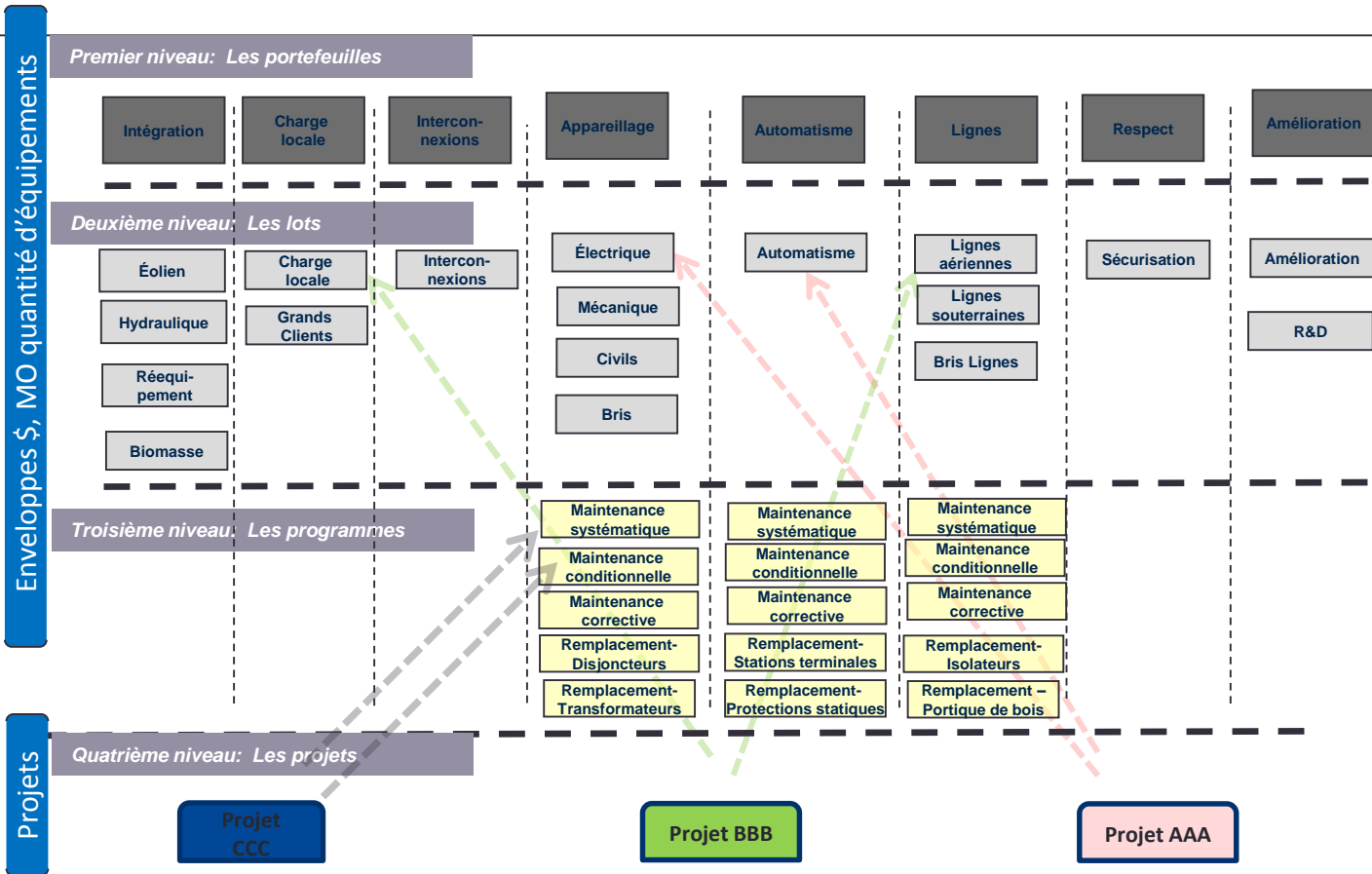
- Substation Load Factor 81%
- Aging Assets
- Cost Increase (Contracts, Material, etc.)
- Procurement Bottlenecks (delayed deliveries)
- Labor Market
- Regulatory Requirements



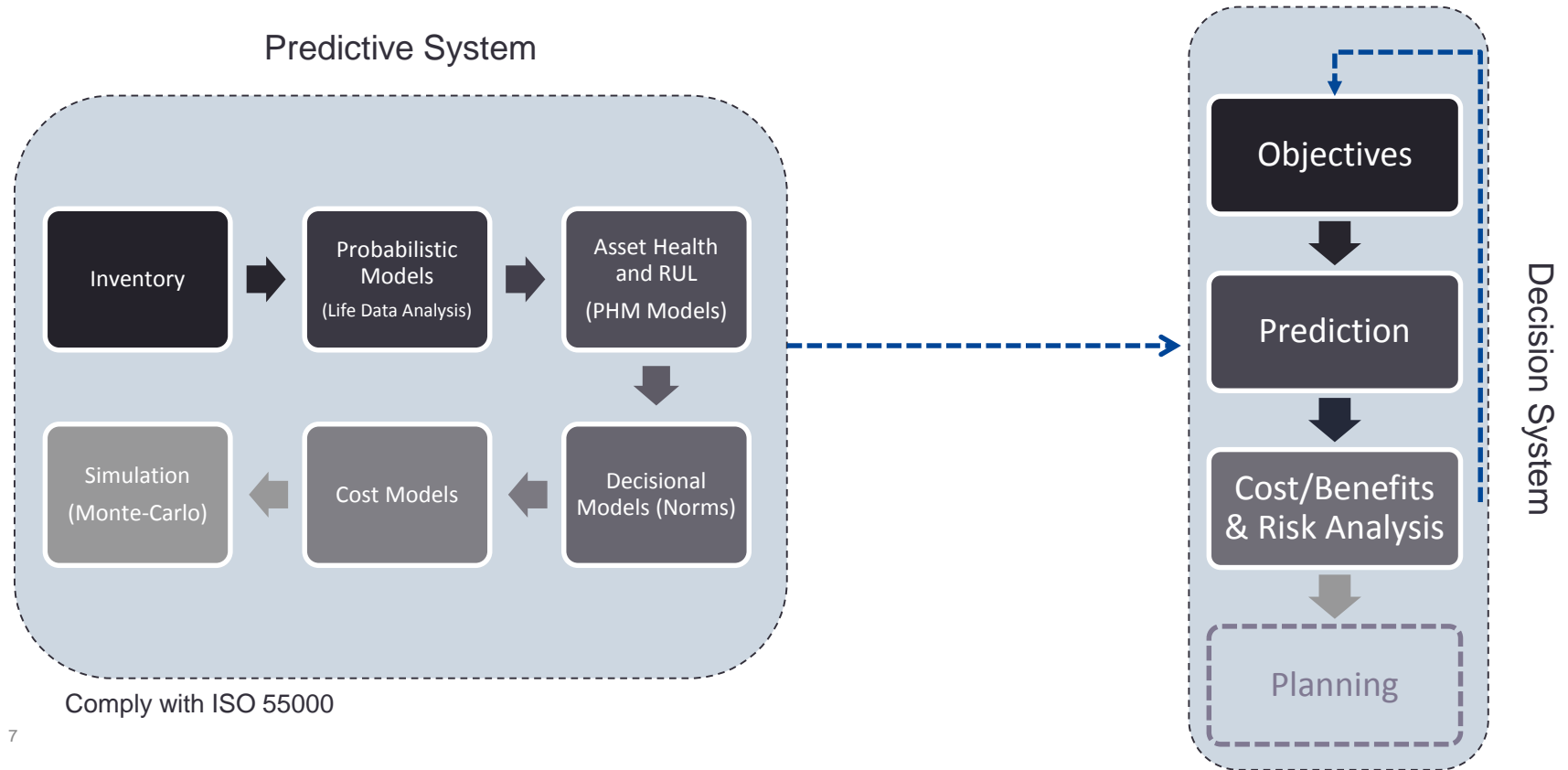
# (HQT) Asset Management Evolution



# HQT Asset Portfolio's

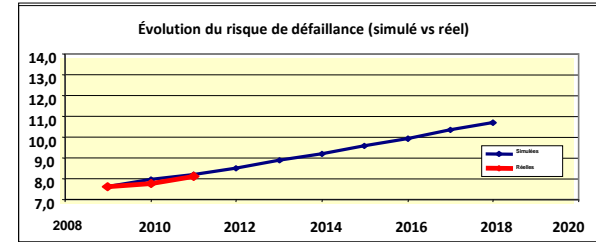


# (HQT) Asset Management System



# Lessons Learned

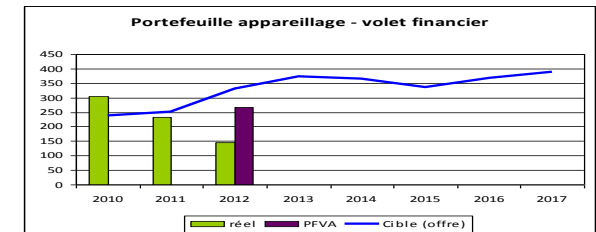
- Successful Systems are likely to evolve (only ?) from small projects
- Data-Driven decisions means free access to data which is in conflict with Governance and Security.
- Relevant data for grid devices is hard to find even if IT systems tend to collect everything. Look for expertise.
- Electric utilities context is a moving target. Models should favor agility over performance.
- Translate statistics to ROI all the time



Nombre de remplacement des disjoncteurs en fonction du risque

Risque	Parc total	Réel				Prévisions				
		2009	2010	2011	2012	MOY	2013	2014	2015	2016
[60-81]	58		1	3	6	3	8	12	12	10
[40-59]	860	28	45	44	53	43	47	51	55	33
[20-39]	1831	23	50	39	37	37	44	35	49	44
[01-19]	5704	40	47	38	13	35	31	36	35	25
TOTAL	8453	91	143	124	109	117	130	134	151	112
Cible		141	141	133	136	138	142	141	147	147
Écart		-35%	1%	-7%	-20%	-15%	-8%	-5%	3%	-24%

\*\*\* Données fictives \*\*\*





# Lessons Learned

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