

Smart Grid in CFE

Definitions and Deployment





- I. Overview of CFE background on Smart Grid
- II. Definition of Smart Grid Strategy
- III. Integration of Smart Grid Portfolio
- IV. Actions towards Smart Grid



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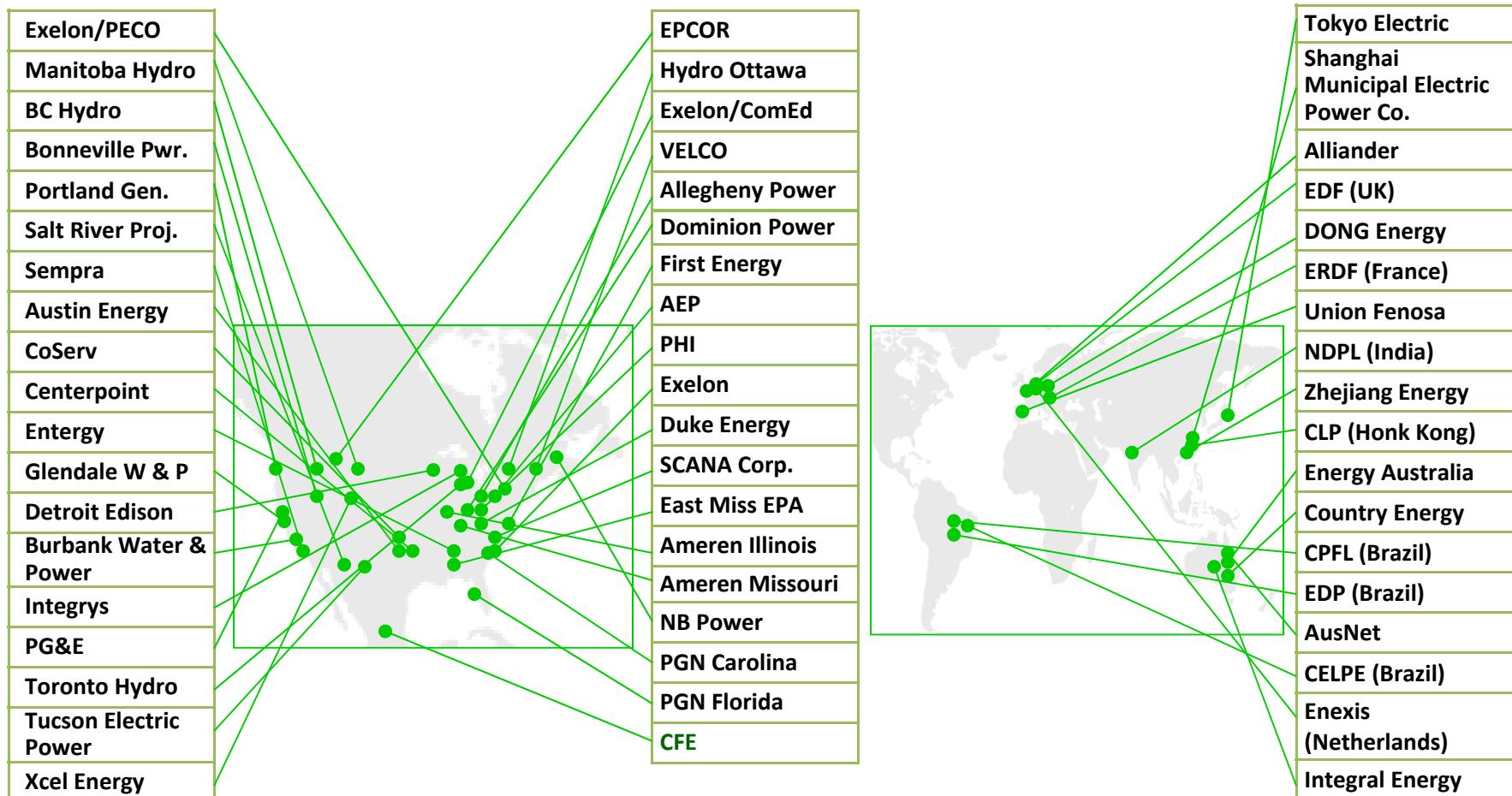


- Single operator of electricity service in Mexico.
- Created and owned by the Mexican government
- Vertically integrated
- 35.3 million customers
- 97.6% coverage (100+ million people)
- 209 generating plants
- 52,515 MW of installed capacity
- 22.67% of installed capacity from Independent Power Producers
- 756,000 km of transmission and distribution lines nation-wide
- Substation transformation capacity of 156,400 MVA
- 46,000 MVA capacity on distribution substations
- 88,000 active personnel

Smart Grid Background



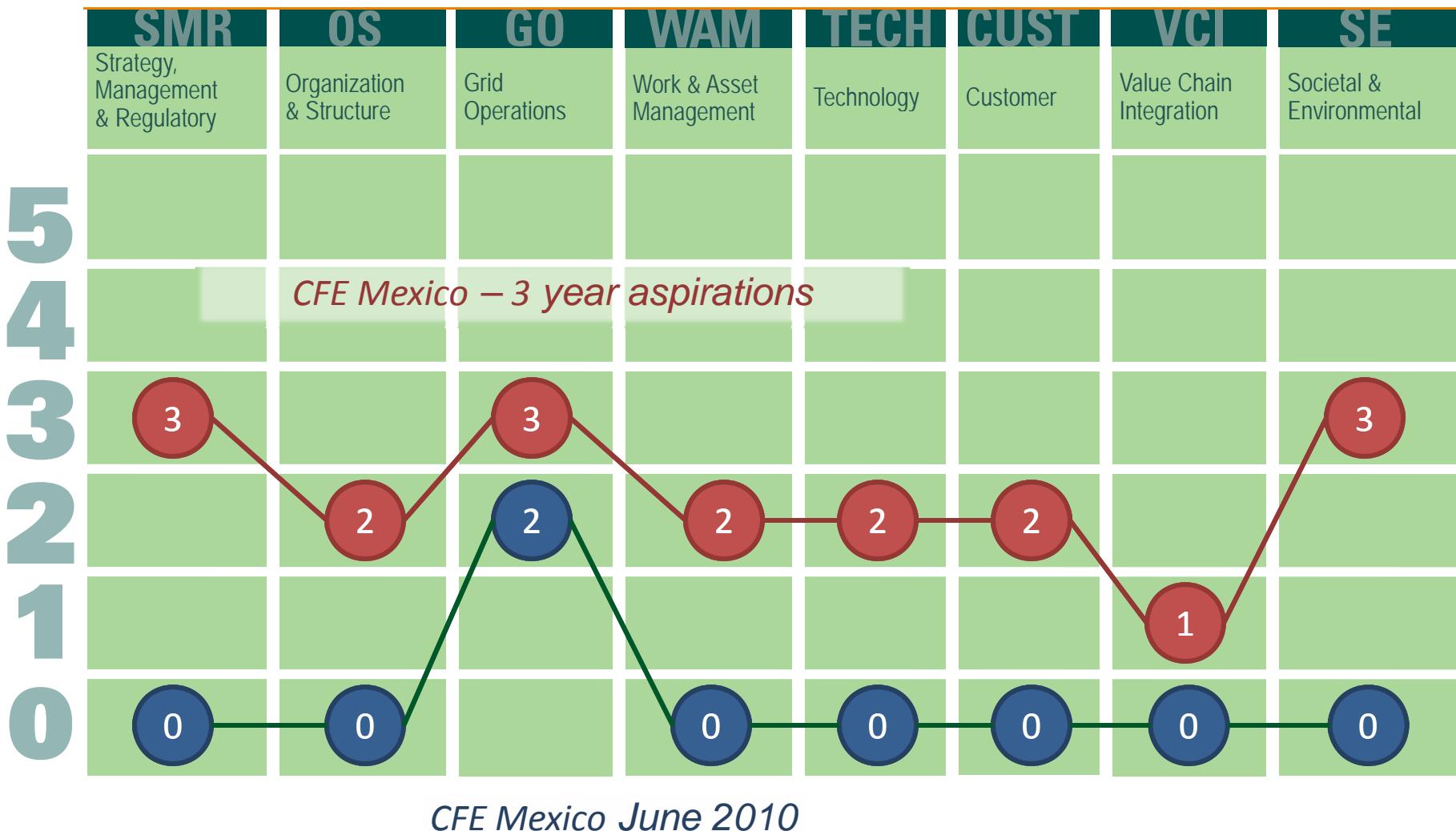
CFE and SENER performed a preliminary diagnose using Software Engineering Institute's **Smart Grid Maturity Model**.



Users of Smart Grid Maturity Model

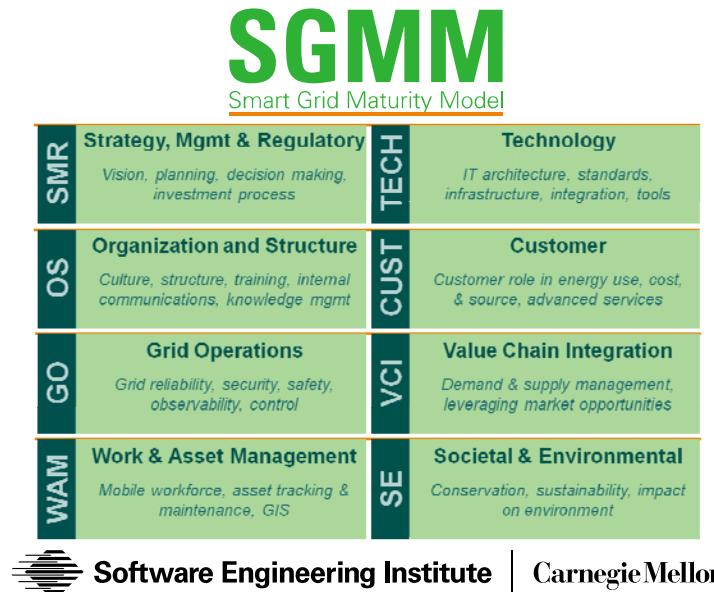


Evaluation of existing scenario and aspiration.

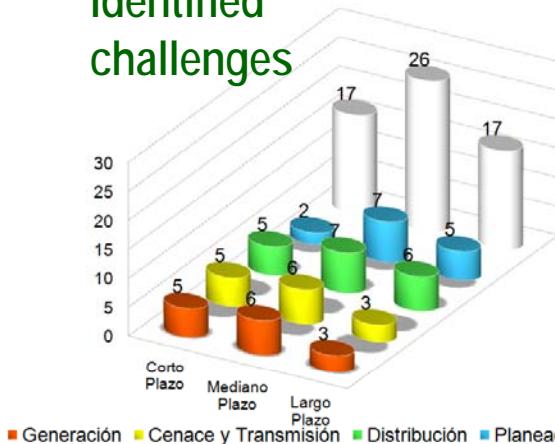




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- II. **Definition of Smart Grid Strategy**
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Identified challenges



Findings +
Benchmark



Desired
Goals



Vision



Key Drivers +
Critical Issues



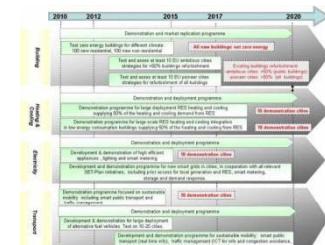
Policy



Actions+
Pilot Projects



Roadmap





Smart Grid vision, policies and strategy within CFE must align to strategic lines of action.



New Infrastructure



Transparency & Accountability



Clean Energy

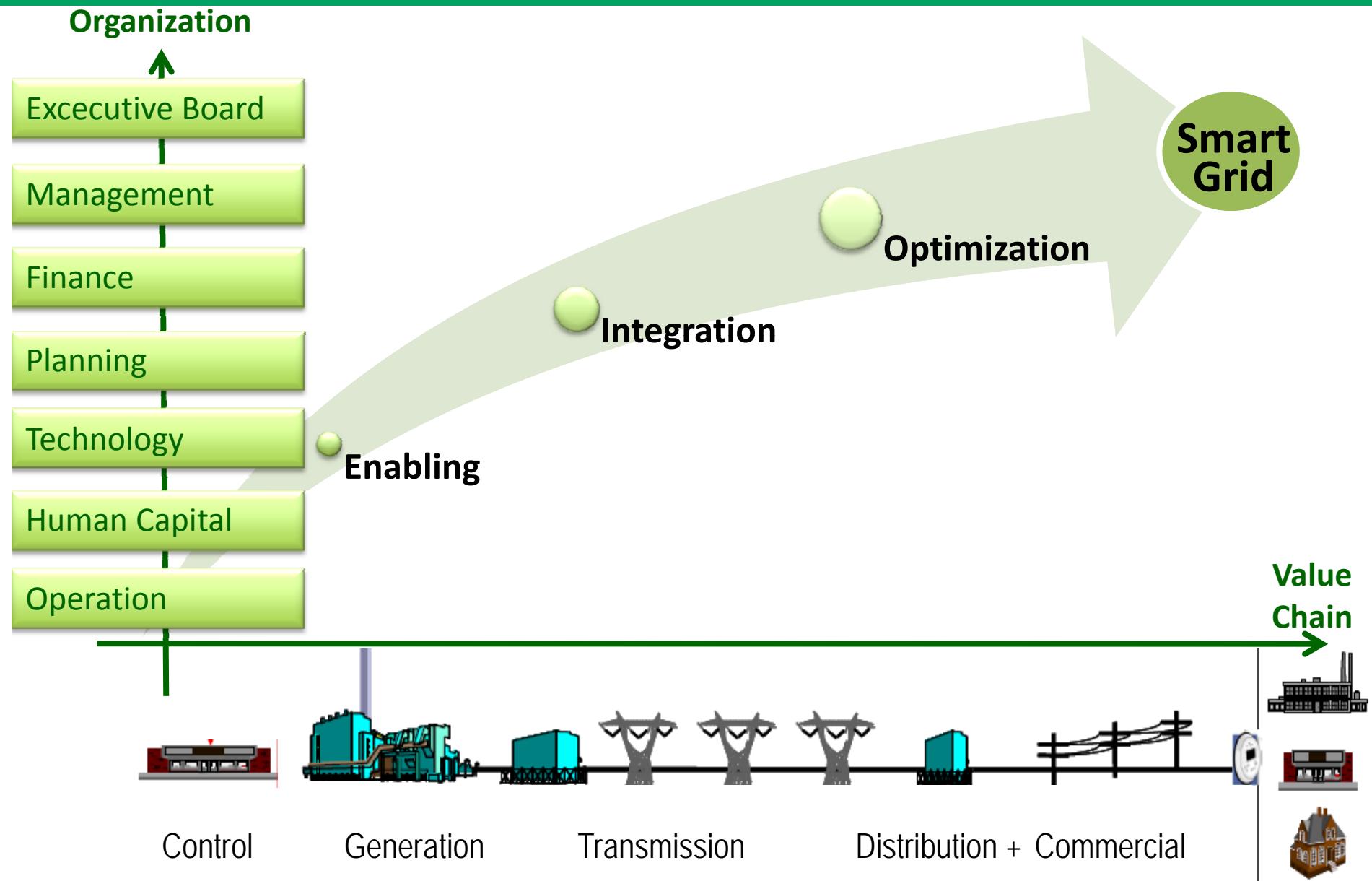


Central Zone Modernization



Customer Service

- Smart Grid vision must be **Customer Centric**.
- Efforts to include **Clean Energy** will be aligned and increased.
- Major investment is being performed on automation and modernizing infrastructure in the **Central Zone** (Mexico City and surrounding area)





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1.- Identify options for technologies, solutions, structures and systems for short, medium and long term projects

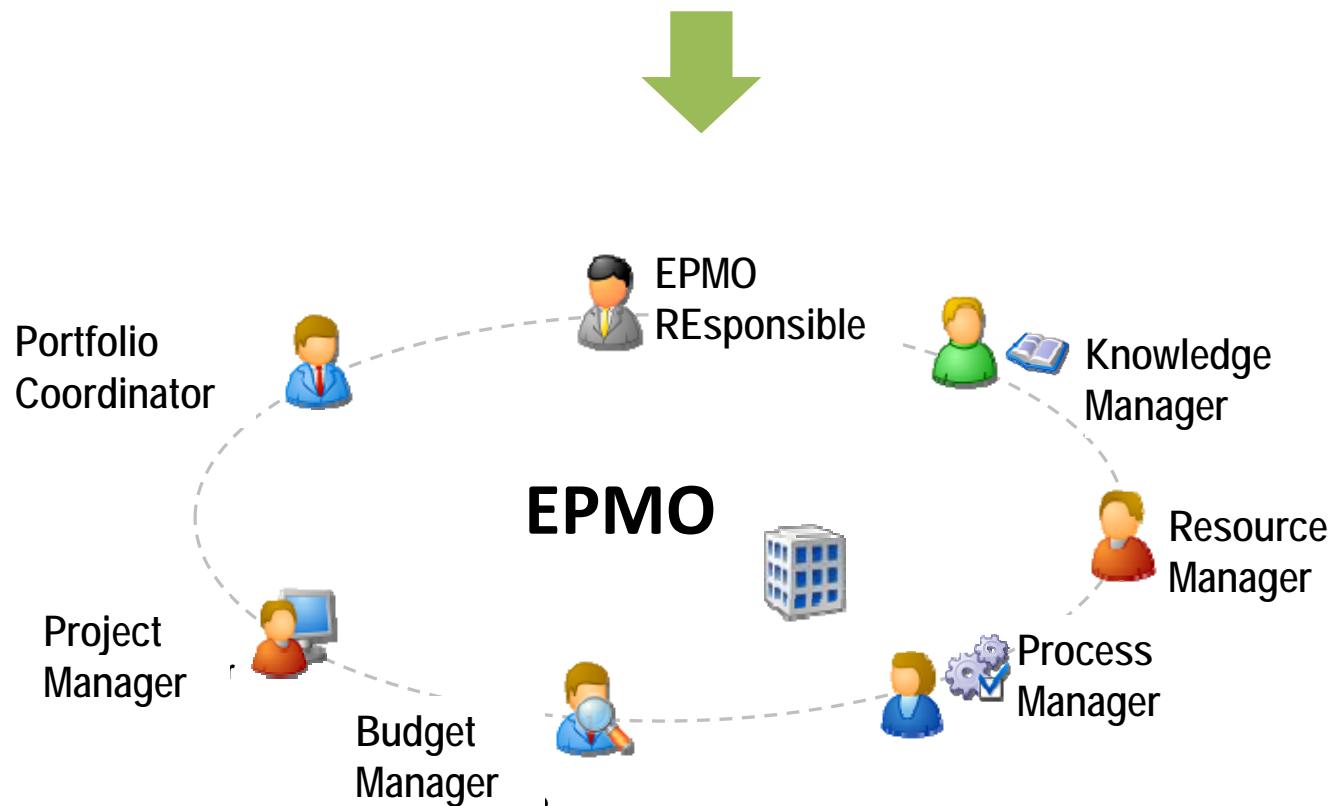
2.- Perform cost-benefit analysis for selected alternatives.

3.- Verify scalability, interoperability, adaptation, convergence and alignment of defined route-maps.

4.- Integrate all projects into a single, integrated global timeline for Smart Grid deployment within CFE.



In order to successfully integrate, deploy and manage Smart Grid Projects that are included in the Portfolio, CFE will deploy an Enterprise Project Management Office.





What to do?

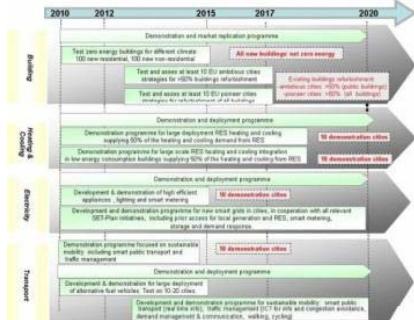
Vision



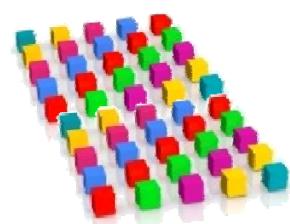
Policies



Routemap



Projects



How to do it?



Academy



Industry



Portfolio

EPMO



Pilot Projects



Evaluation



Priorization



Budget

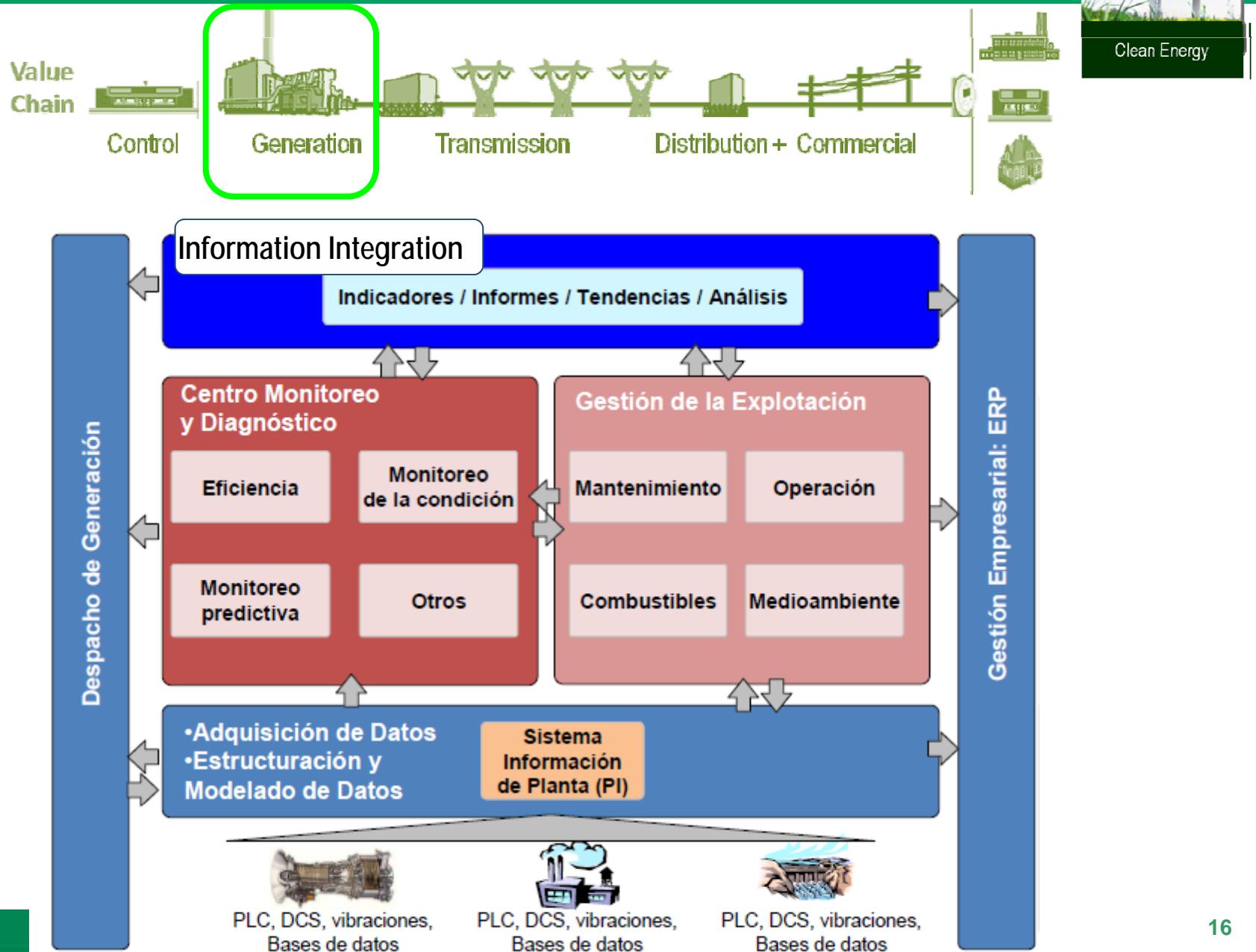


Planning



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- Non-Exhaustive Examples of Smart Grid Projects

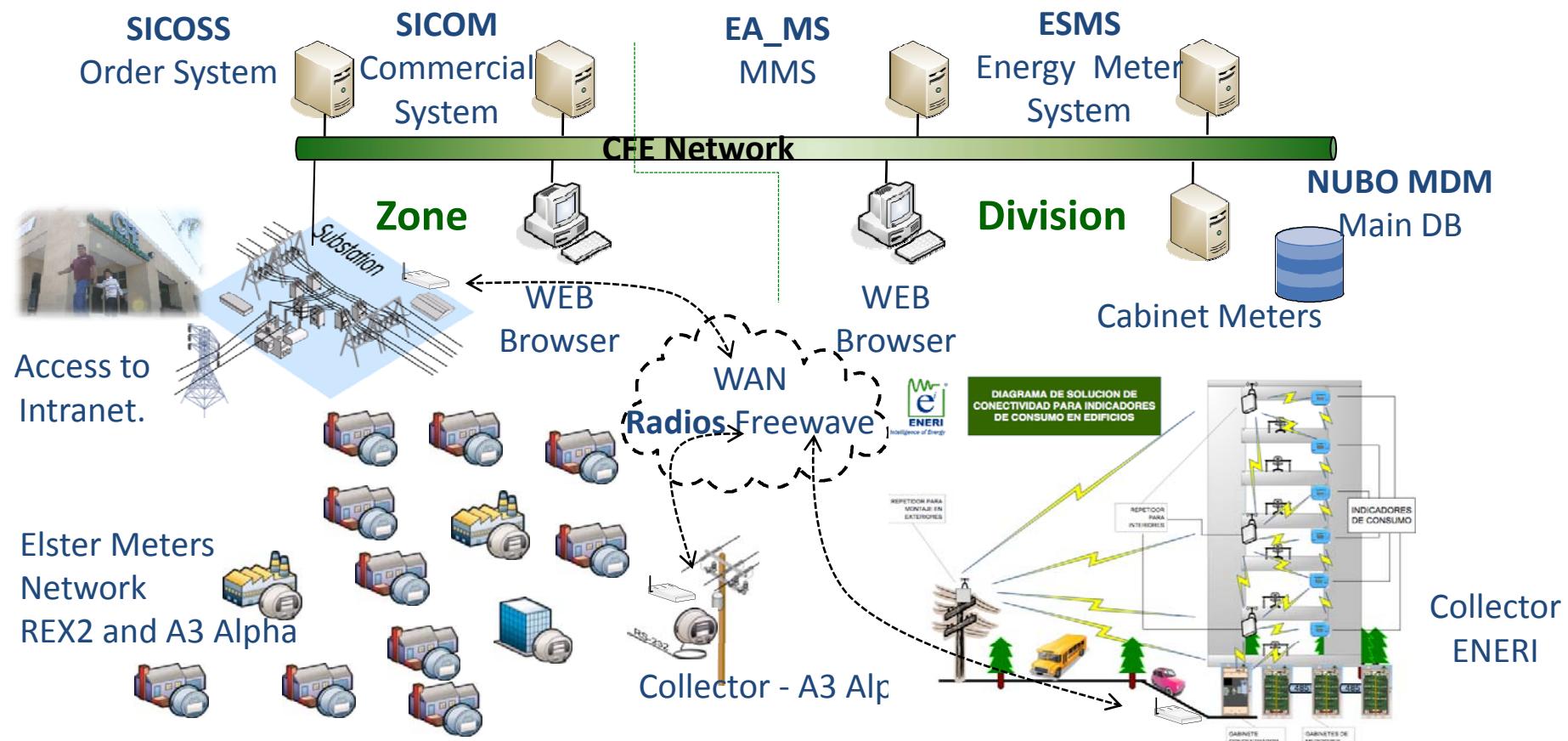
Advanced Monitoring of Generation



AMI Project in Polanco



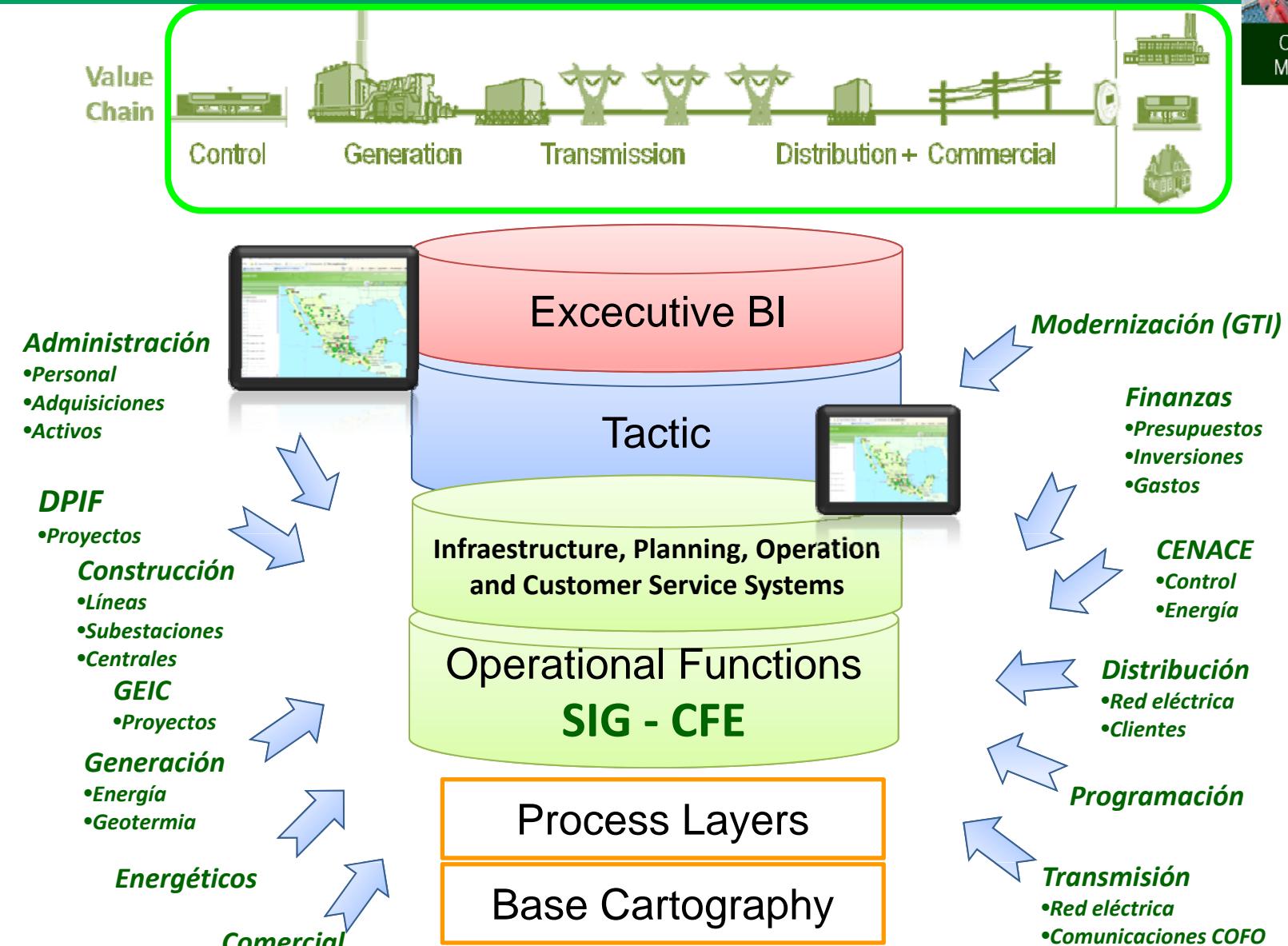
Central Zone
Modernization



Enterprise GIS



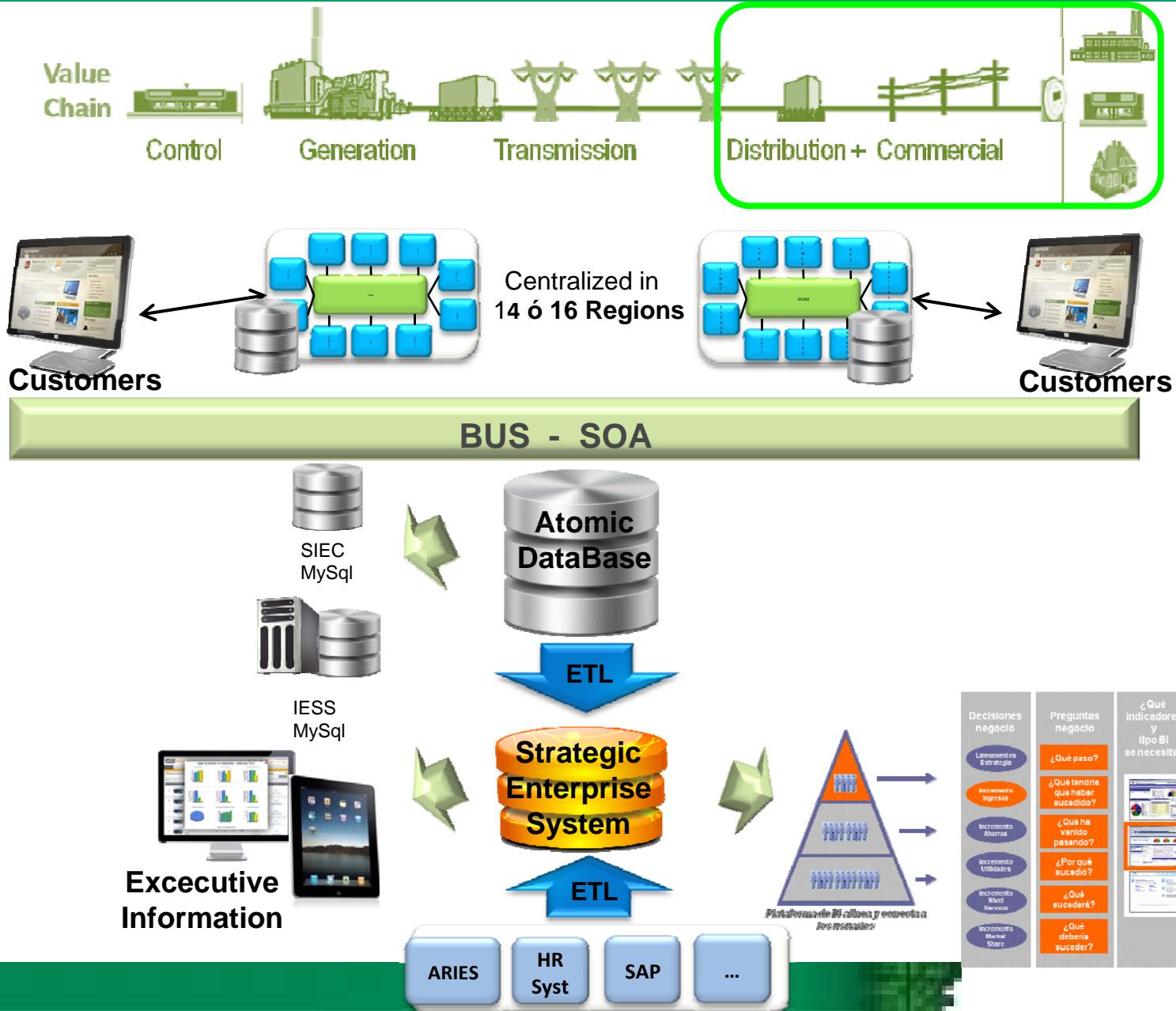
Central Zone
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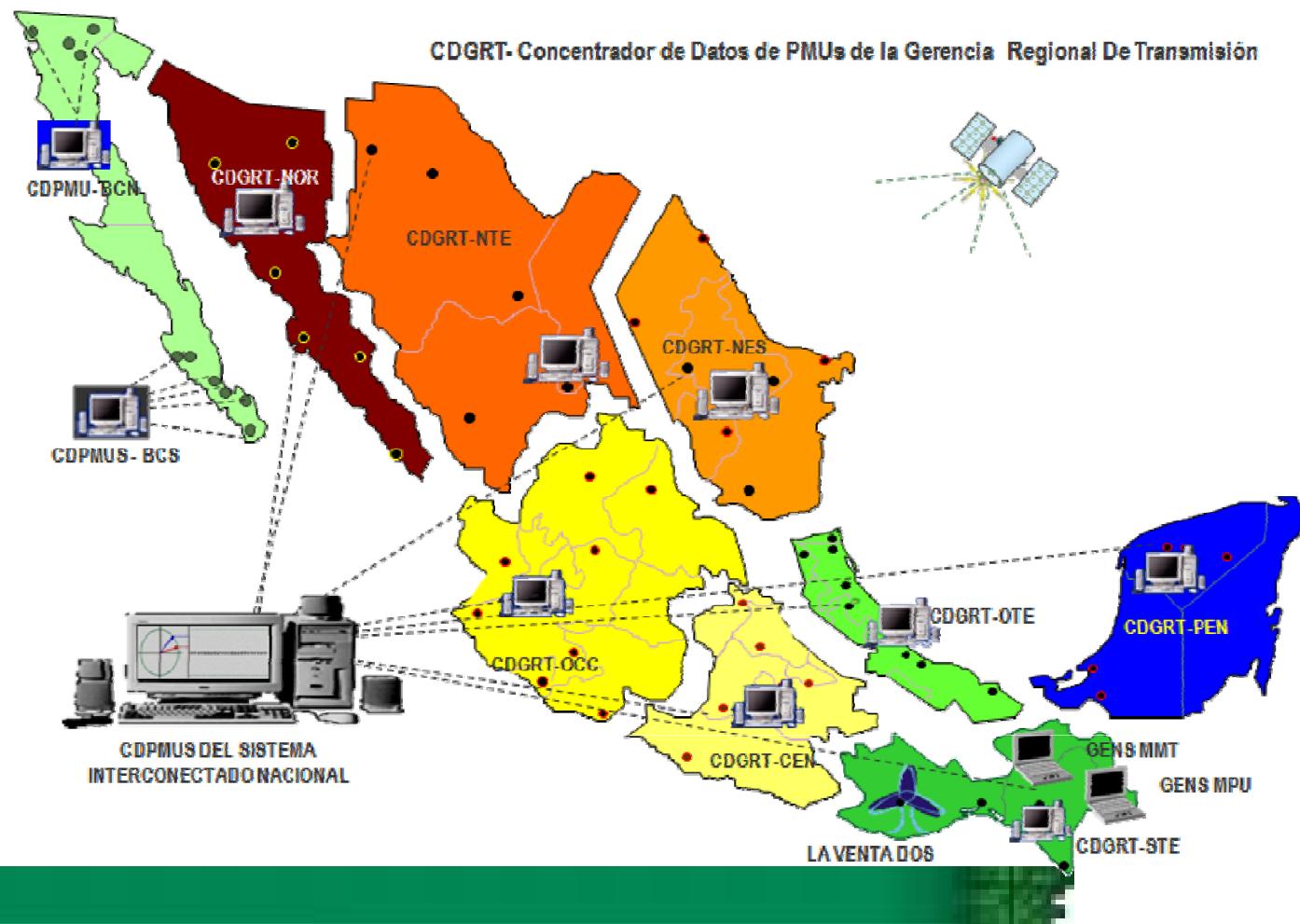
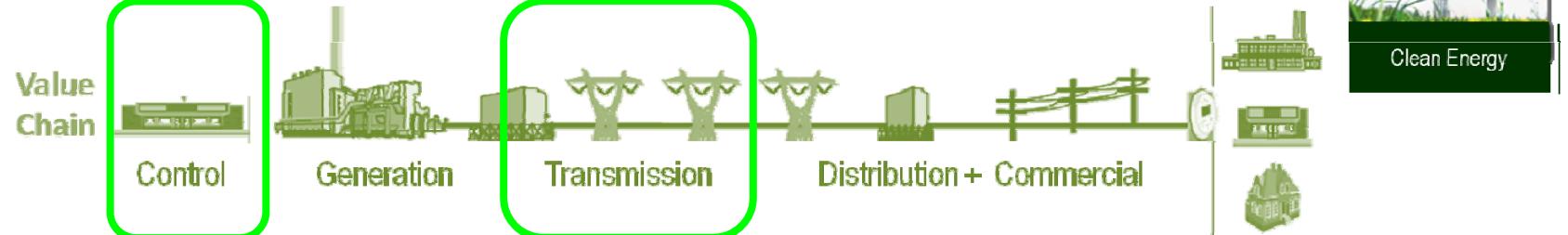
Modernization of Commercial System



Customer Service



PMU Integration





Thank you

Francisco Acosta

Chief Modernization Officer

franciscoacosta@cfegob.mx

CFE *Una empresa
de clase mundial*