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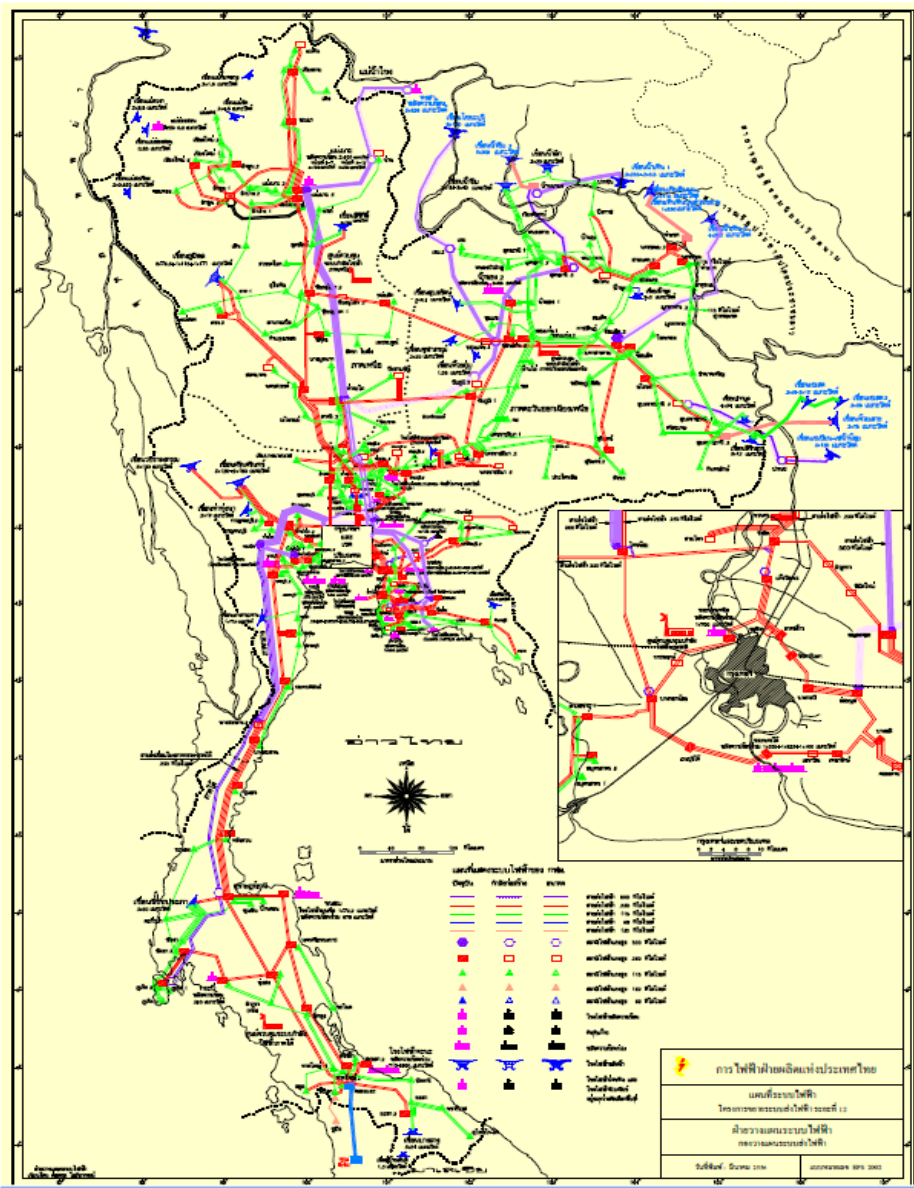
Electricity Transmission and Distribution

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Structure of electrical power system



- Electricity consumers: 20.6 million households
- Number of TSOs: 1
- Number of DSOs: 2
- Peak load: 27.3 GW

kV	Circuit km
500	4 746.488
300	23.066
230	14 651.372
132	8.705
115	13 828.898
69	19.000
Total	33 242.312

EGAT TSO:

- Maintain Grid reliability and quality of the System according to Thailand power system standard
- Control frequency, voltage and power flow of high voltage transmission system
- Co-ordinate with IPPs, SPPs and Fuel suppliers
- Supervise the switching operation and responsibility for power system restoration in case of black and brown out.

MEA/PEA:

- Monitoring of own system
- Operating contract to DSO-Level generation
- Support of TSO to operate

ERC:

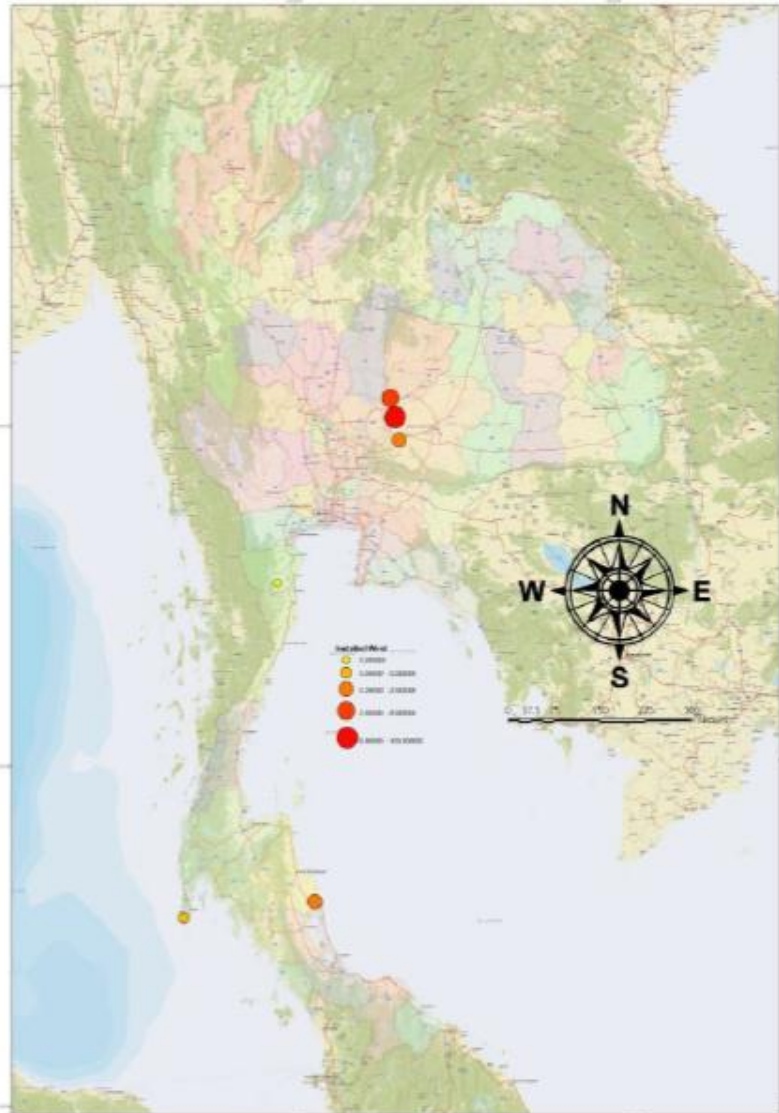
- Ensuring sufficient power supply for consumers
- Regulation of the distribution of power in urban and rural areas
- Approval of transmission and distribution related projects proposed by EGAT, MEA and PEA
- Involvement in the creation of the Transmission Development Plan and the Smart Grid Master Plan

Ministry of Finance:

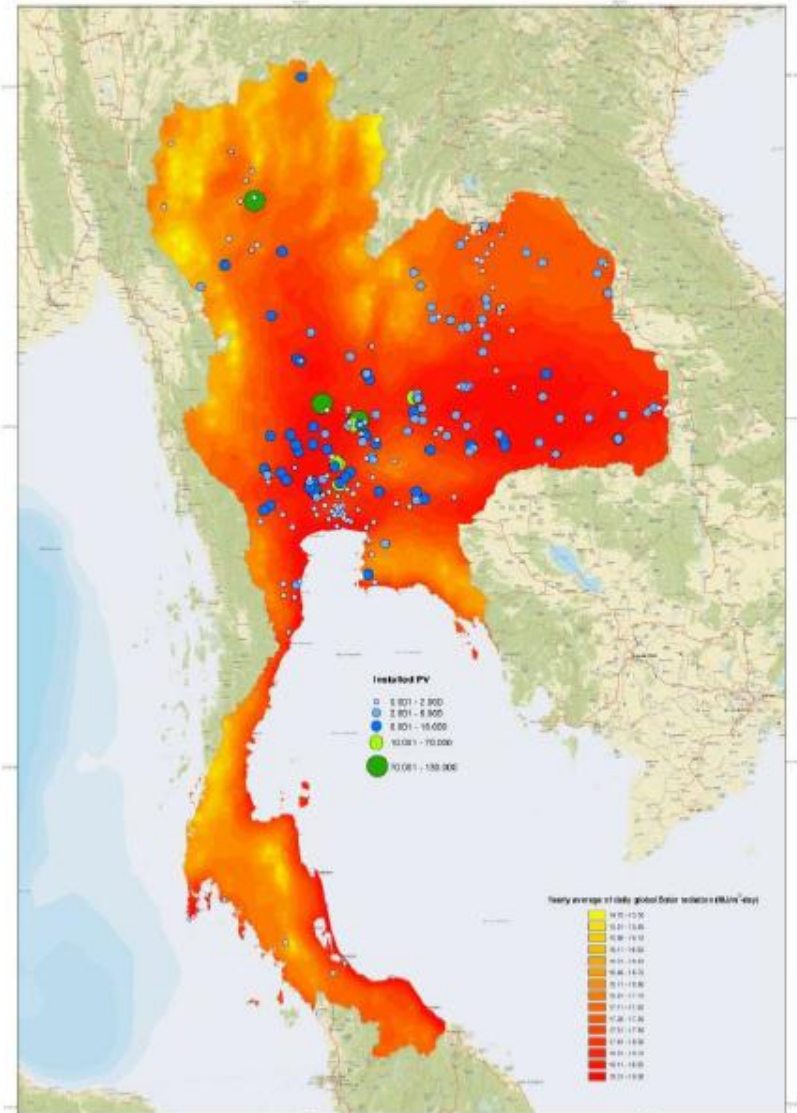
- Final approval of actual investments in transmission and distribution networks.

Location of Renewable Resources

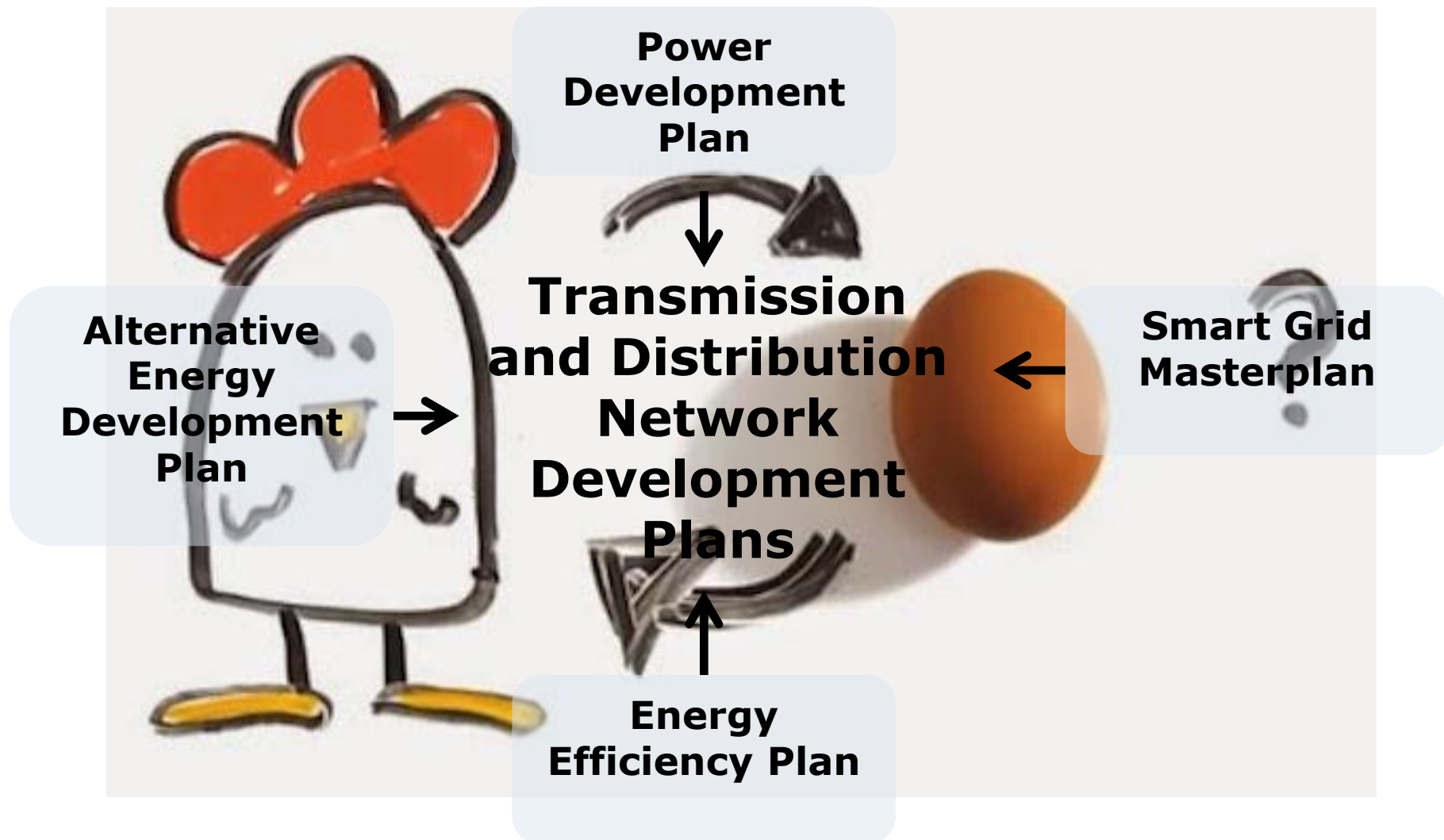
Installed Wind turbines



Installed PV panels



Transmission and Distribution Planning



Recommendations I

- Clear allocation of responsibilities in relation to transmission and distribution regulation avoid overlaps and misalignments
- Enable ERC to master it's responsibilities by providing the necessary skills and knowledge to assess decisions taken by EGAT especially in terms of grid planning and investments.
- Improve the transparency and co-ordination between the different development plans in order to solve the chicken and egg problem.

Recommendations II

- Develop a regular evaluation cycle to measure the accomplishments of the Network Development Plans as well as their actuality in relation to other plans.
- Transparent cost-benefit analysis and timely planning of network reinforcement to assess the development of areas rich of renewable resources to ensure network development and generation development to go hand in hand.

Recommendations III

- Introduction of probabilistic calculations in Network Development Plans as well as operational planning processes.
- Participation of renewables in balancing and ancillary services.
- Allow reverse flows as soon as it is technically possible.
- Increase Interconnection capacities to overcome bottlenecks due to e.g. landscape.