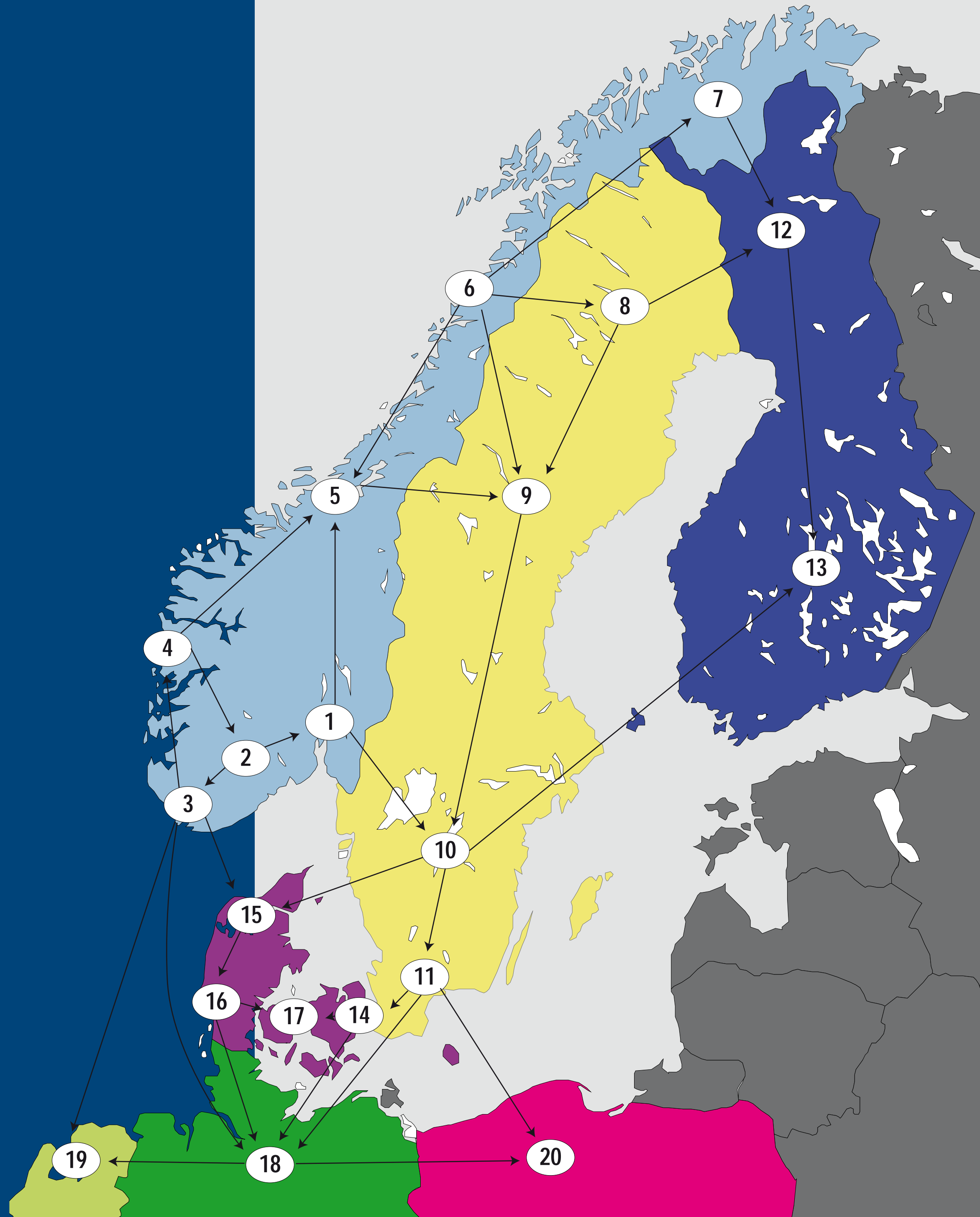


EMPS/Samkjøringsmodell

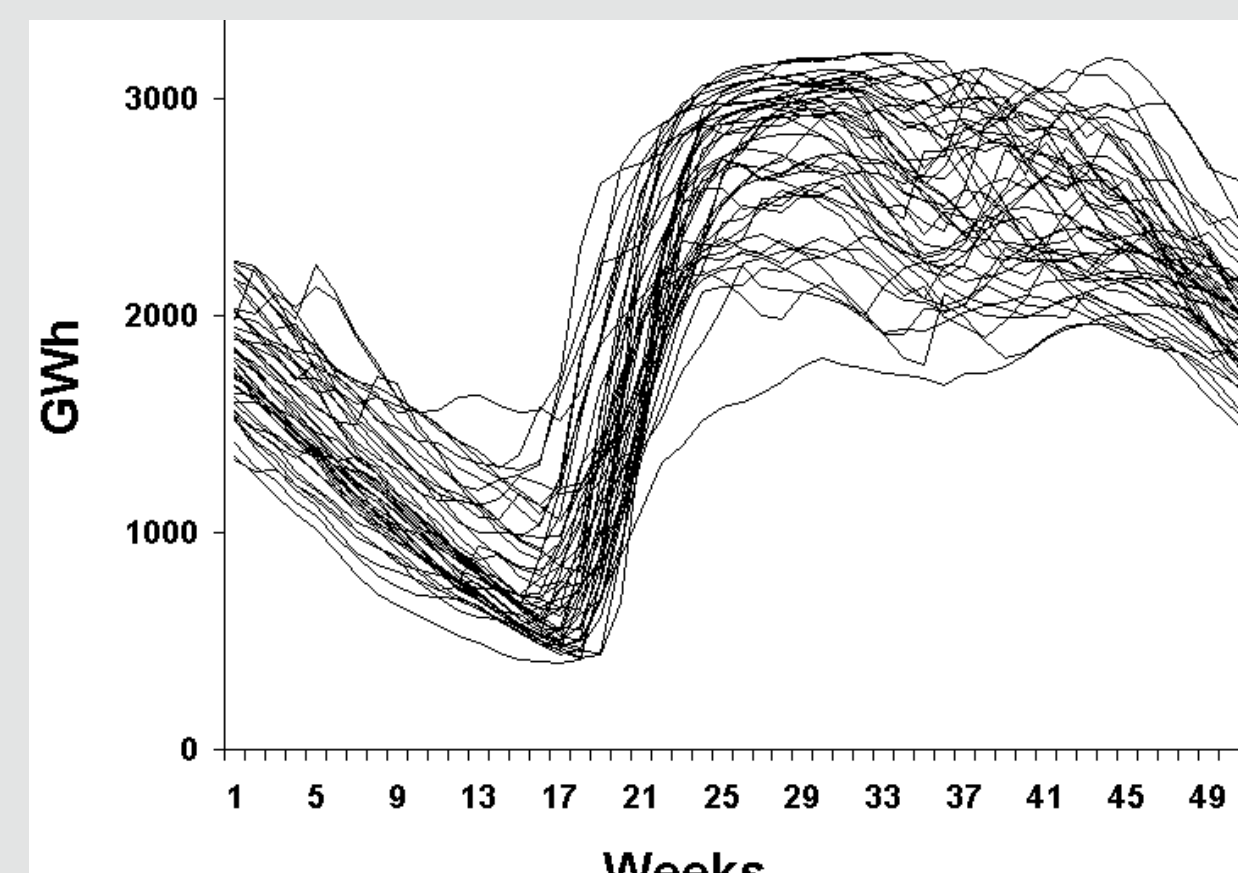
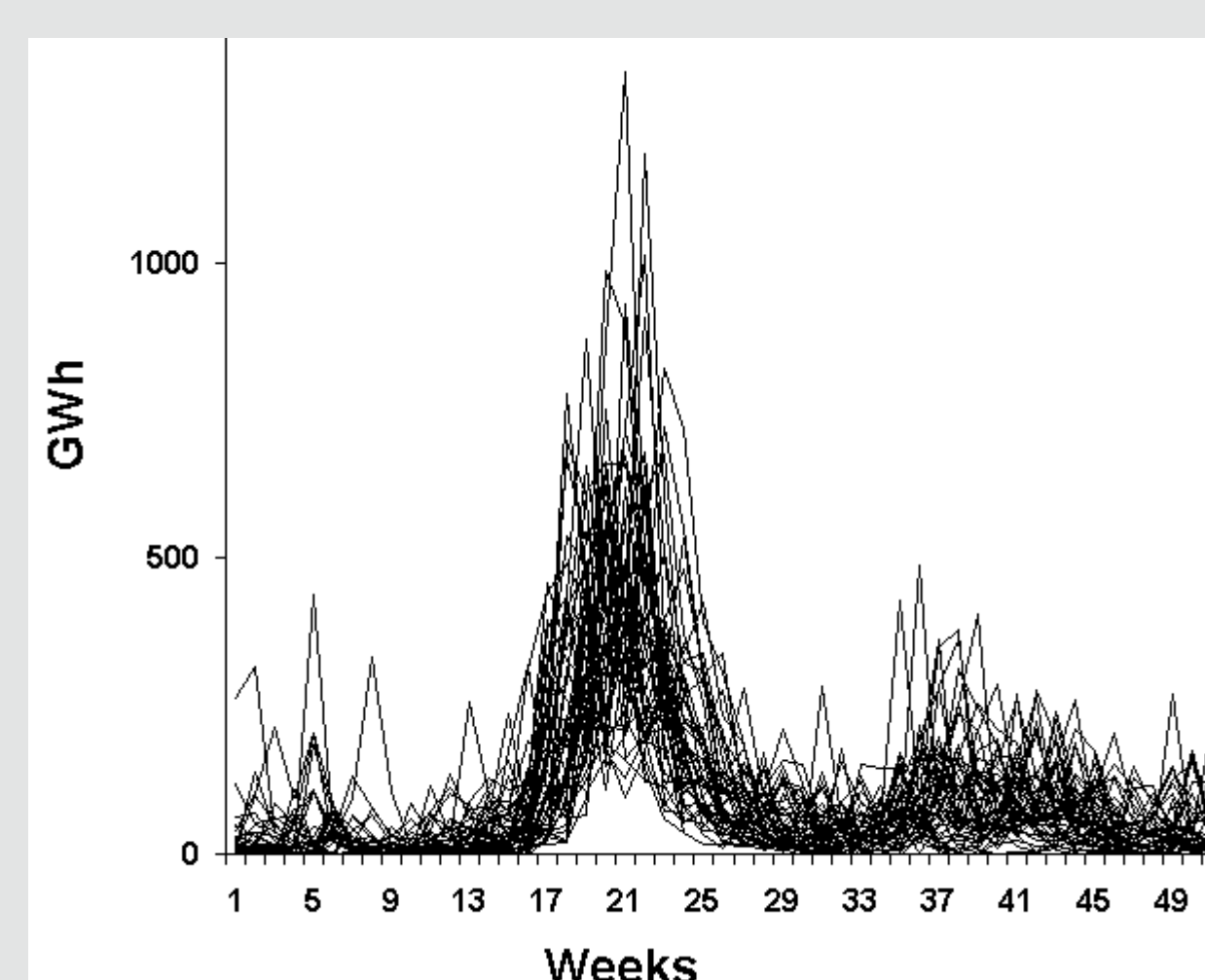
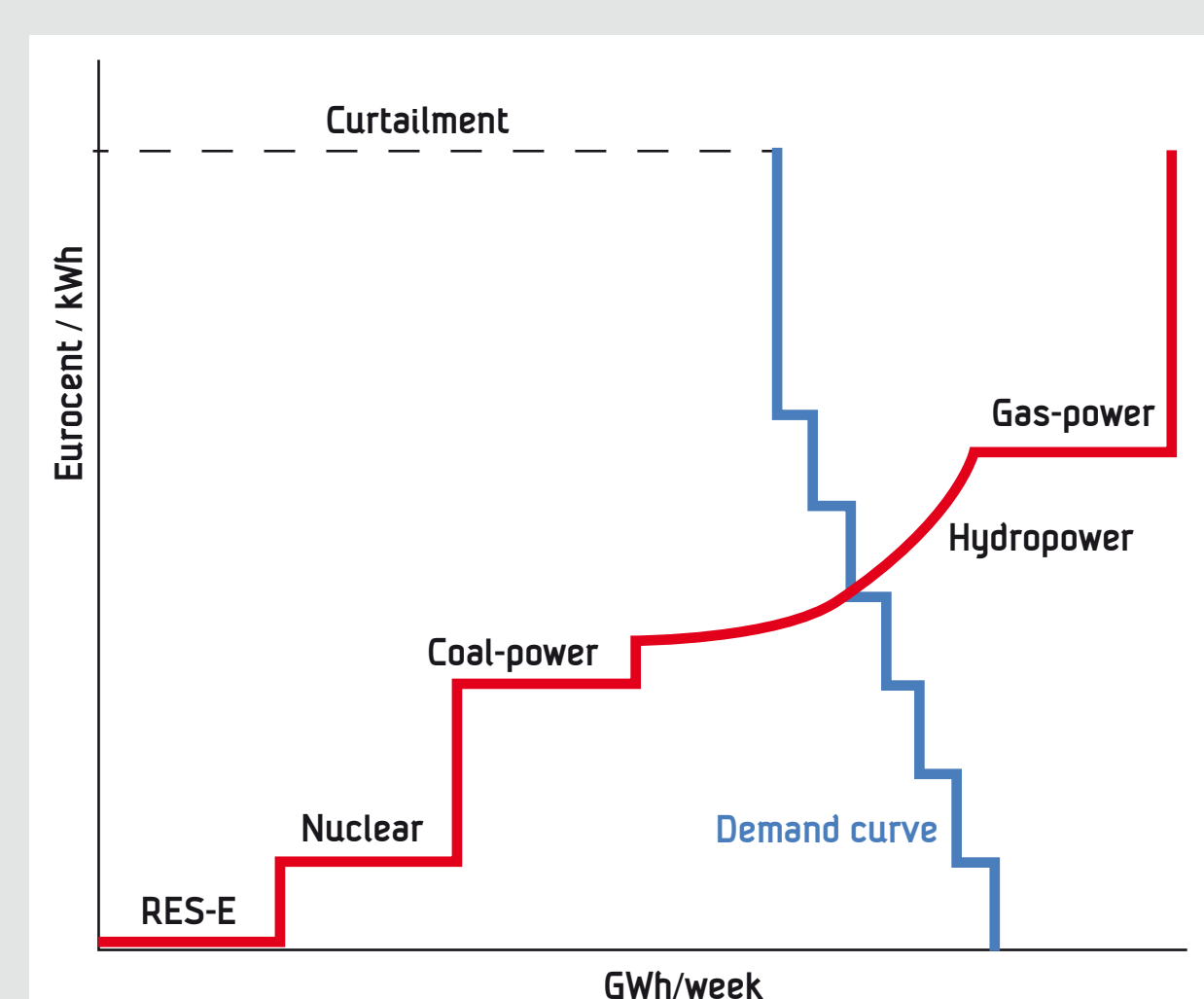
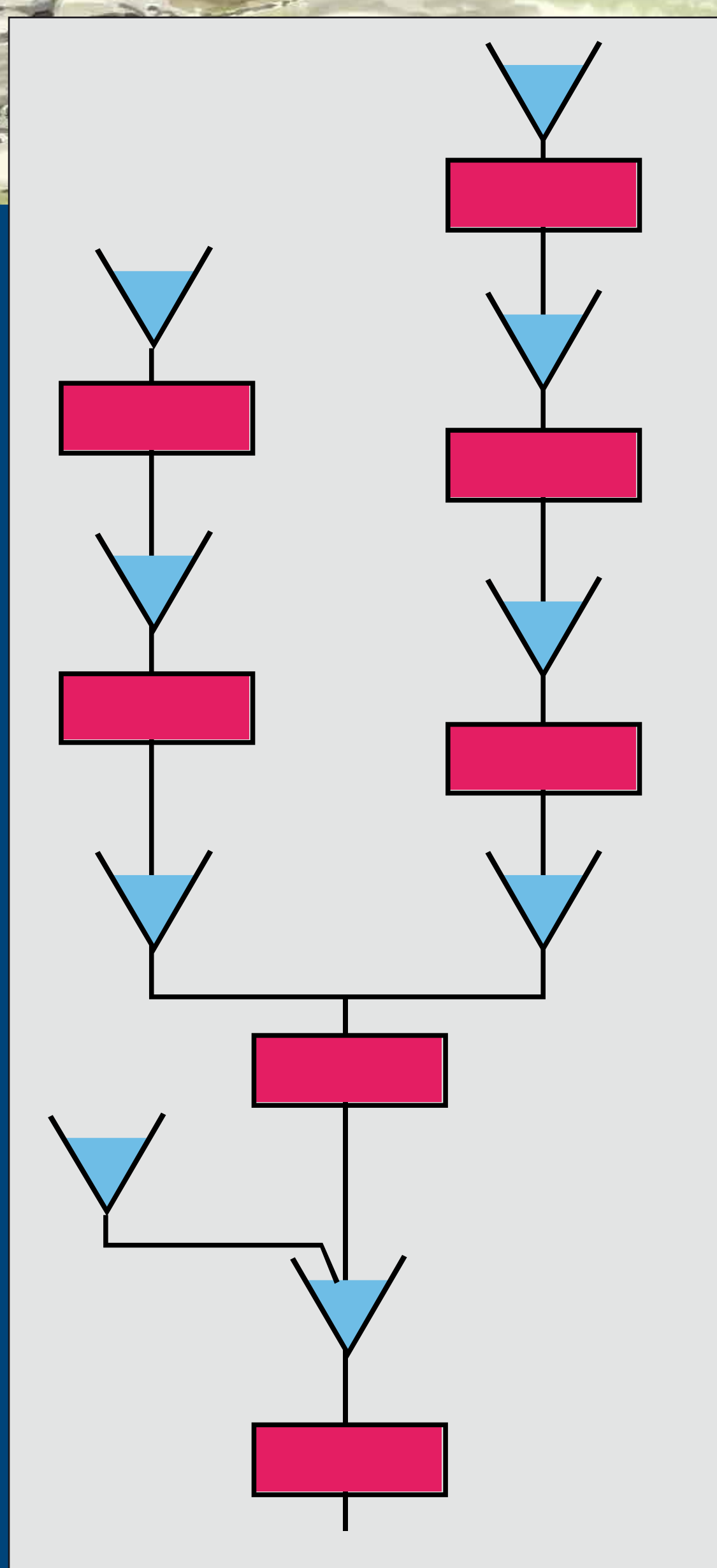
A stochastic fundamental market model with hydro optimization

Strategy for aggregate hydro models – Simulates detailed hydro



Functionality:

- **Demand**
 - Multi year load profiles
 - Gradual or dynamic optimized adaptation of consumption
- **Thermal unit start-up costs & reserves**
- **Temperature dependent load**
 - firm load
 - CHP capacity
 - 24 hour time resolution
- **Forecast**
 - HBV –based inflow
 - Factor files for inflow and climate
 - Short term forecast in long-term period
 - Short term temperature forecast
- **Wind power**
 - Wind power modules (hydro equivalent modules)
 - Energy production series (hourly, daily or weekly time resolution)
 - Multiple wind farms
- **Time resolution and horizon**
 - Accumulated or sequential load periods
 - Up to 168 load periods pr week
 - Up to 25 years data horizon



■ Transmission

- Capacity tied to consumption or wind
- Repetitive maintenance
- Hourly time resolution
- Detailed grid with load flow model (EPF: Samlast or Samnett)

■ Other

- Exogenous stochastic price
- System price
- Investment analysis
- Automatic calibration
- Mid – term model (as available in EOPS)
- Parallel processing

■ Latest development / new models

- Samnett
 - EPF/Samlast-type model
 - Flow based market clearing
- ReOpt
 - Detailed sequential hydro
 - Daily pumped storage

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