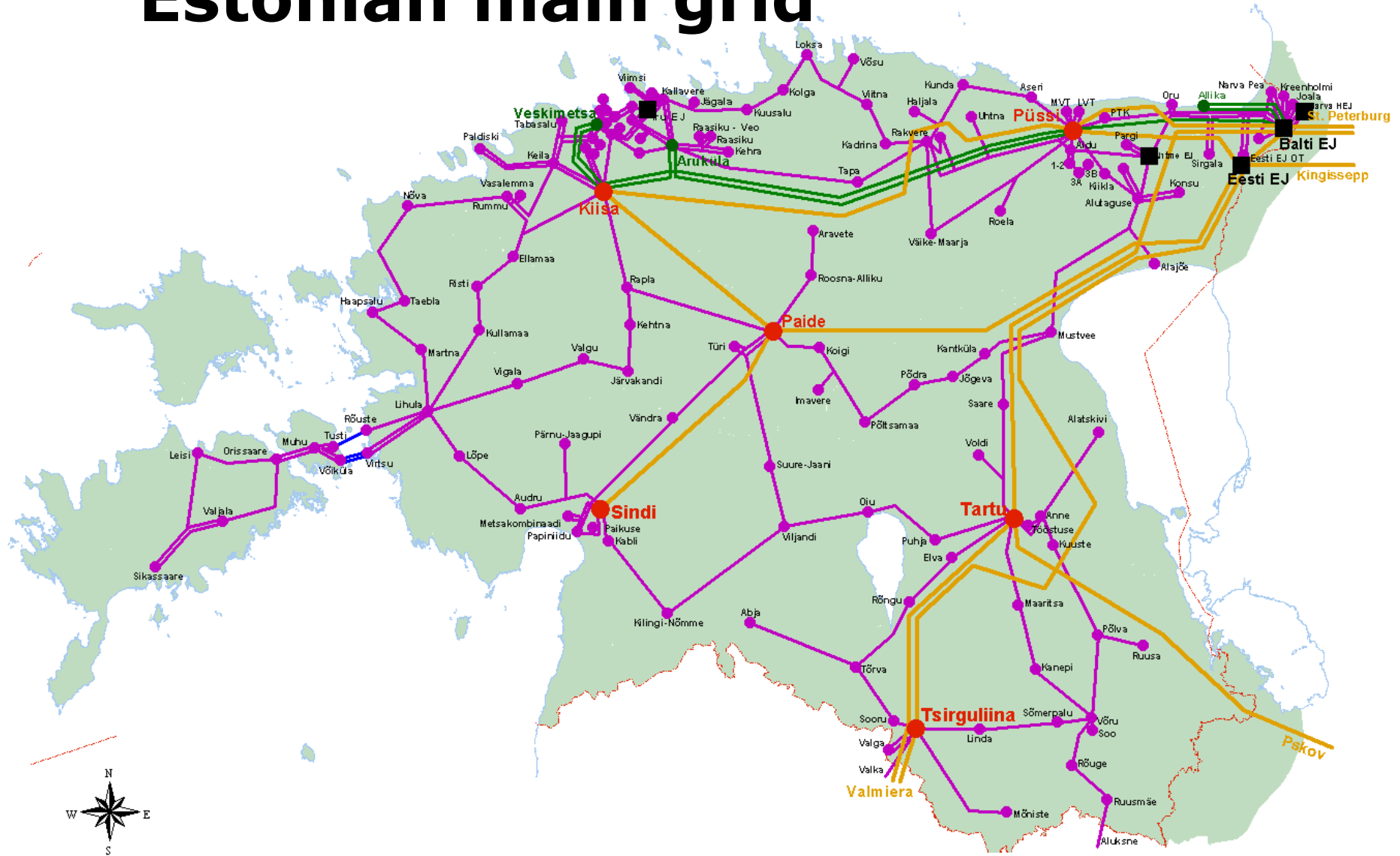


# **Congestion management and existing bottlenecks in Estonia**

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# Estonian main grid



# Current bottlenecks and limits

- ◆ **Transmission limits of interconnection with St. Petersburg and Latvia (both roughly  $\pm 1000$  MW)**
- ◆ **Estonian export 99% of time less than 540 MW (max 625 MW), import 99% of time less than 430 MW (max 455 MW) in 2004**
- ◆ **No bottlenecks inside Estonia that influence cross-border trade**

# Import limit

- ◆ **Import to Estonia limited to 40% of Estonian consumption**
- ◆ **Limit required by system defence plan for disconnecting Estonian power system in the case of frequency drop in UPS**
- ◆ **Enough generation must be left to cover the load after frequency load-shedding to avoid system black-out**
- ◆ **Congestion management method on import proportional to last year's total import**

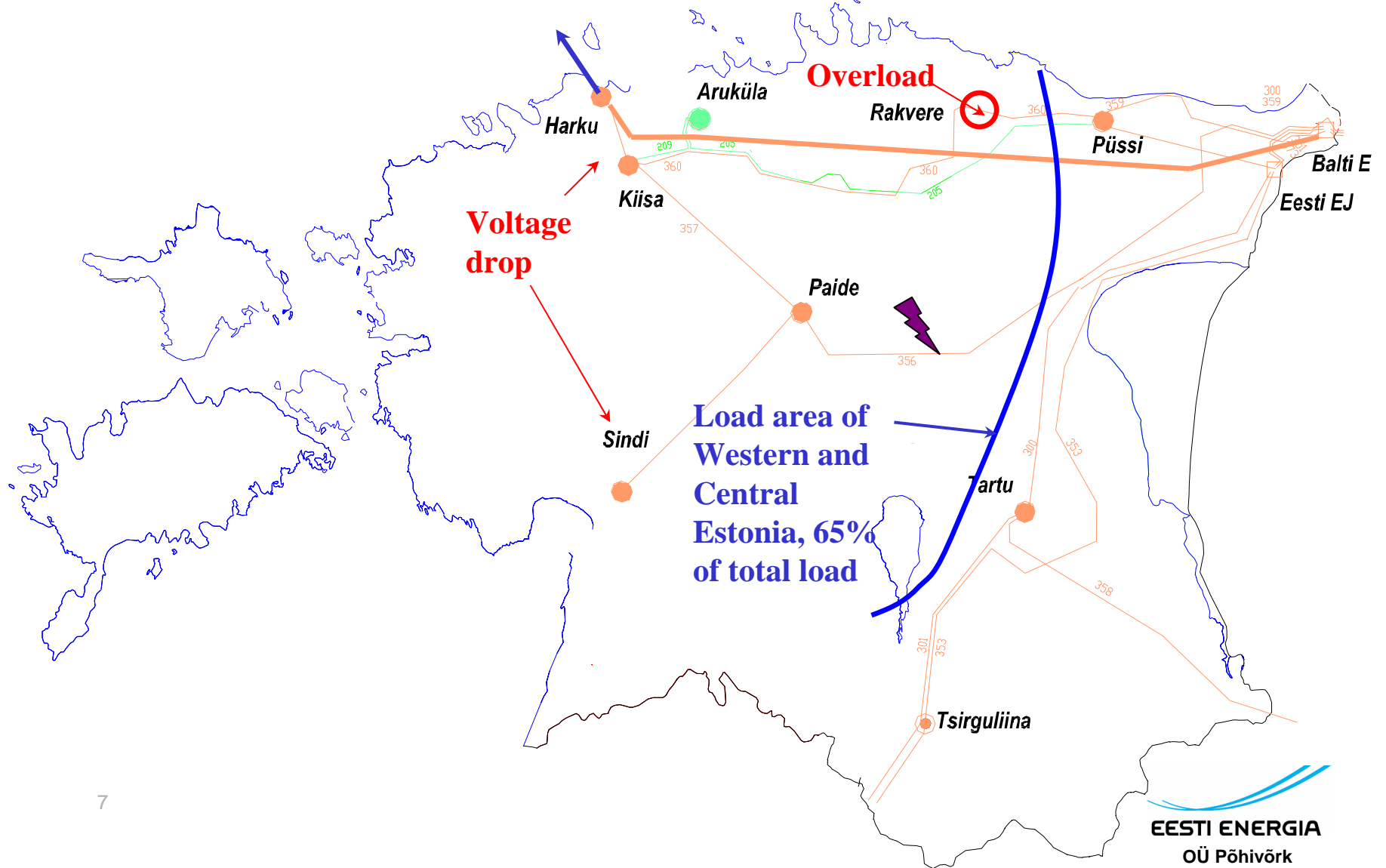
# The effects of import limit

- ◆ **As Estonia is mainly exporting country this limit has some effect only in the time of high-water in Latvia, when the water energy is purchased by Eesti Energia**
- ◆ **Total annual import to Estonia already limited by Electricity Market Act – only for eligible customers ie. 10% of annual consumption**

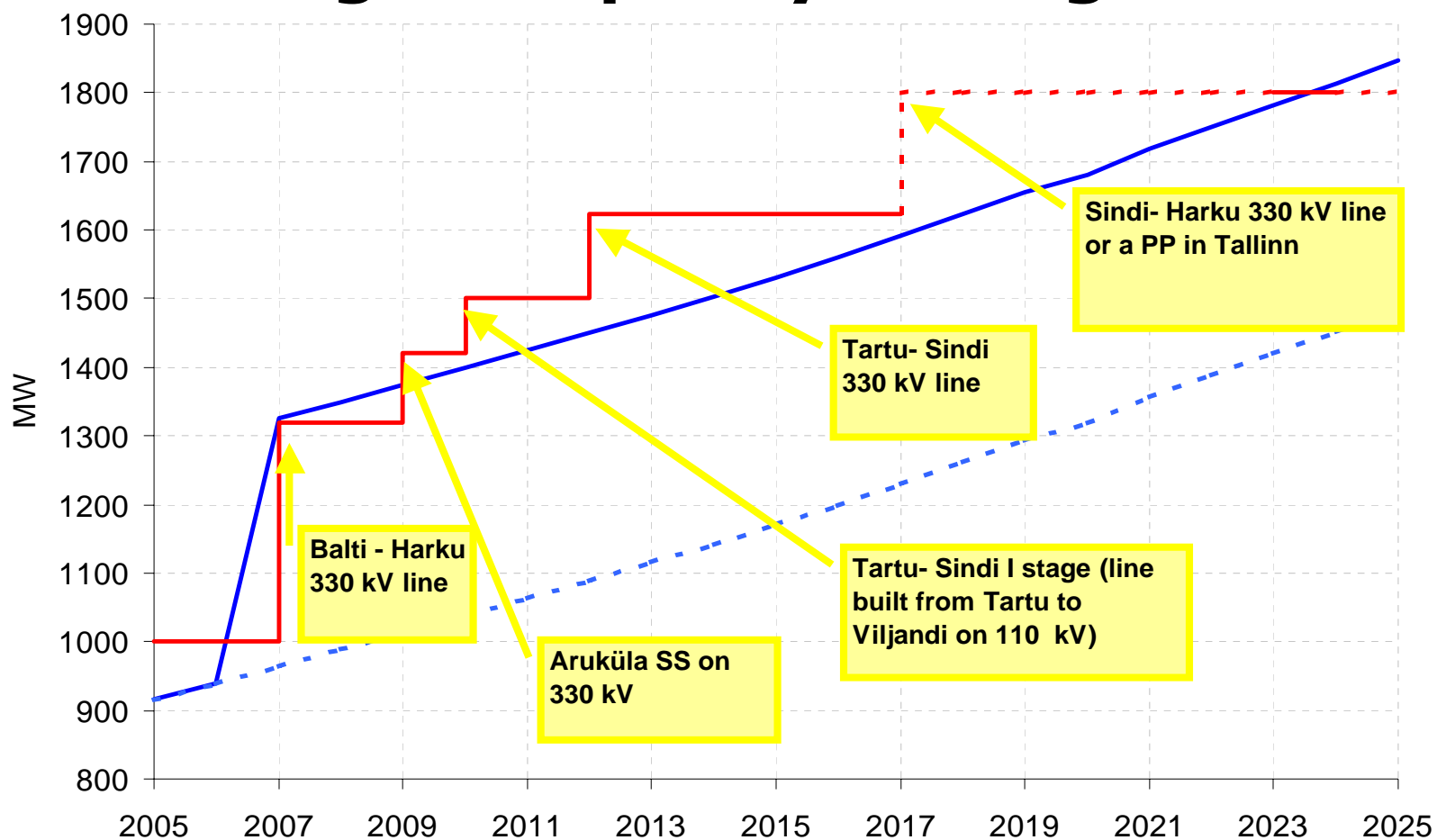
# Congestions in near future

- ◆ **Occasional limitations to transit through Estlink (a planned DC link from Estonia to Finland) after year 2006**
- ◆ **Estlink transit limited by the east-to-west transmission capacity inside Estonian main grid**
- ◆ **Other interconnection limits remain unchanged**

# Estonian 220-330 kV grid 2007



# Assuring tr. capacity in long-run



— load (moderate) + Estlink 365 MW

- - - load (moderate)

— transmission capacity from Narva to Tallinn

# Conclusions

- ◆ **At present virtually no congestions to cross-border trade**
- ◆ **In the nearest future possible only minor Estlink limitation**
- ◆ **Increase of Estlink limitation along with the growth of domestic loads is mostly avoided by network reconstruction and development**

**Thank You!**