

Launching SINTEF's next generation market model



Trident

SINTEF's user meeting, 07.05.2025

Powered
by

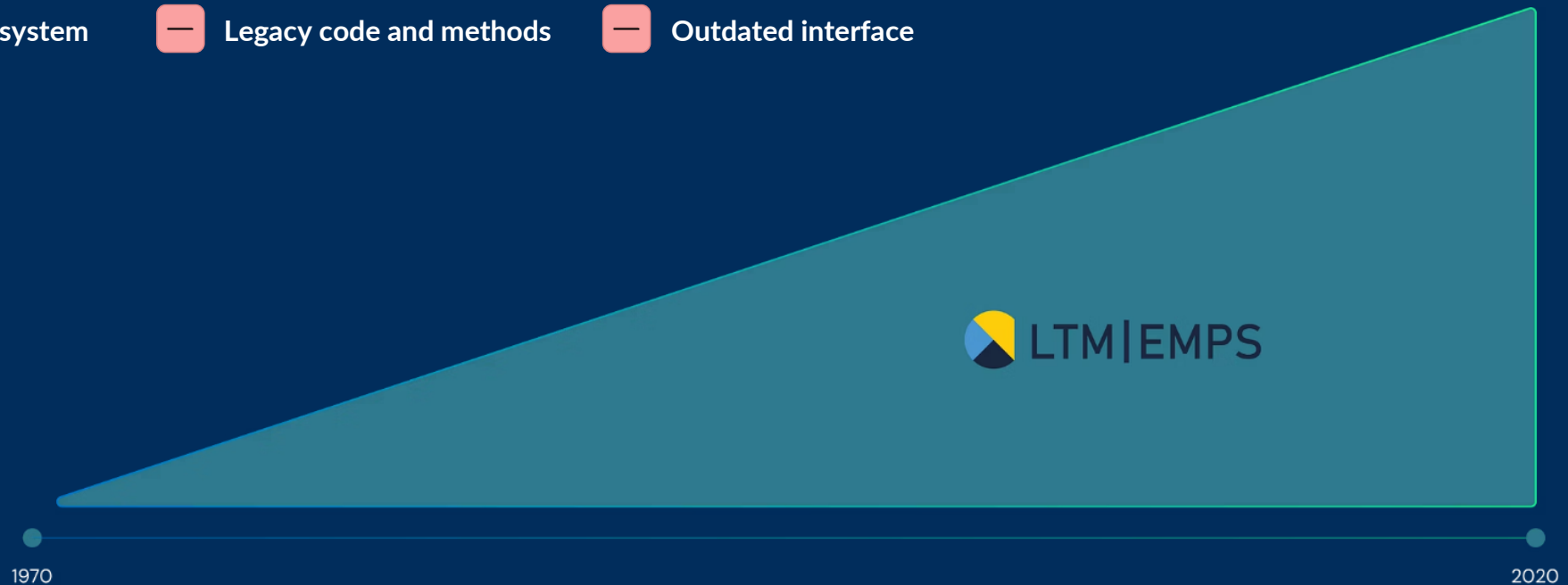


Why do we develop Trident?

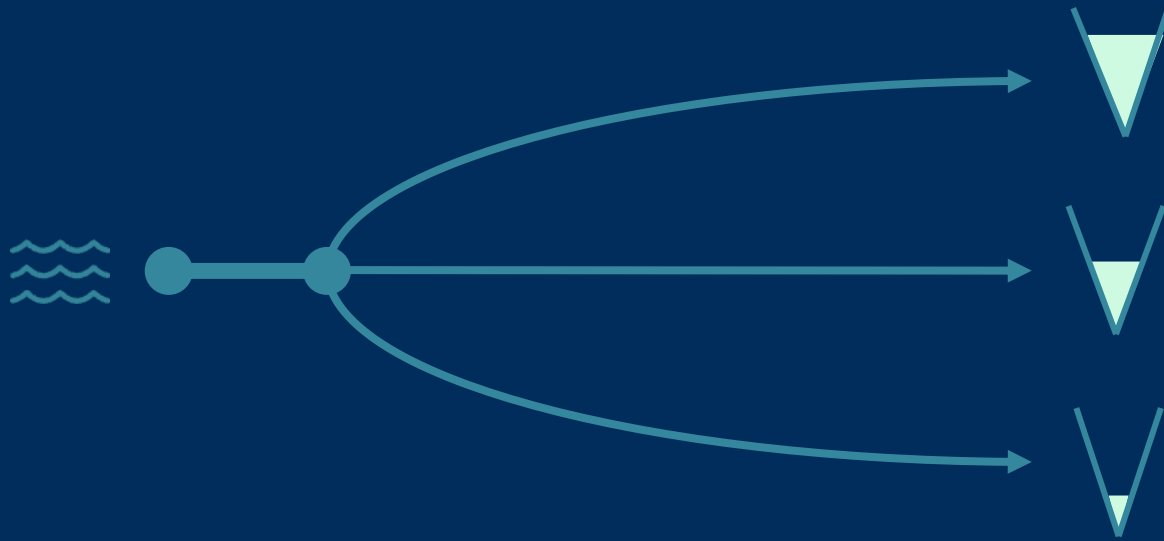
Existing marked models ...

-  are based on more than 100 R&D projects
-  have been 50+ years in operation
-  create several bn NOK value per year

-
-  Rapidly changing power system
 -  Legacy code and methods
 -  Outdated interface



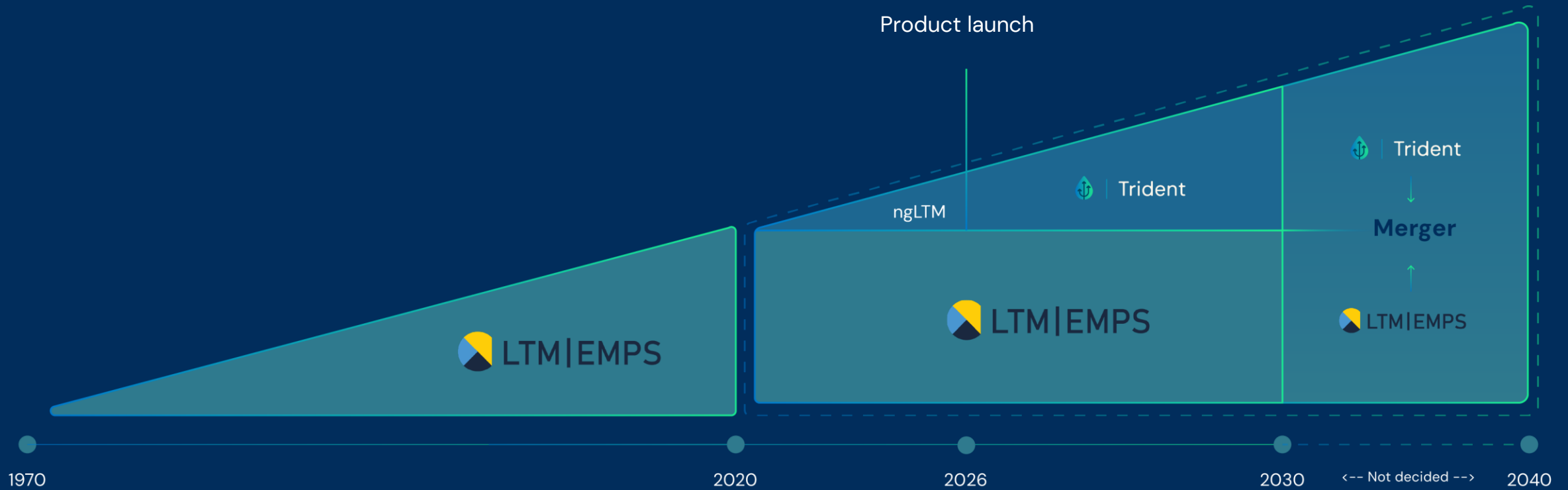
Trident is a power market simulator



- based on multi-stage stochastic optimisation
- suited to analyse large-scale renewable power systems (Europe)
- includes a fundamental modelling of various technologies in the power sector
- comprises a detailed description of hydropower and uncertainty

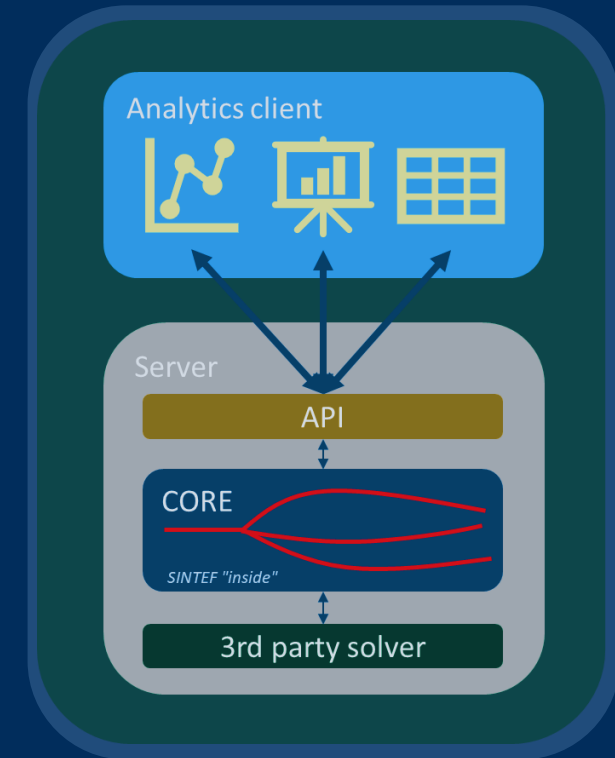
Trident implements a Scenario Fan Simulator technique, developed during several R&D projects at Sintef Energy.

The expected timeline for our market models



Achieved and planned milestones

- 0 — **Next generation market models PoC and v1**
2024
- 1 — **Detailed information for interested customers**
H2 – 2025
- 2 — **Product release first version of Trident**
Q1 – 2026
- 3 — **Product release full version of Trident**
2028
- 4 — **Full merger of Trident and EMPS**
Beyond 2030



Trident provides the functionality for



Detailed hydropower

Description of complex water courses and uncertainty that provide individual water values for price forecasting and long-term production planning



Standardised API

State-of-the-art interface via API for easy integration in analysis systems and coupling to databases



Modelling future power systems

Representation of short-term variability and flexibility of new technologies, such as batteries, hydrogen and demand response



Calculation time

Analysis results from the large-scale optimisation model can be retrieved within time frames in line with decision processes

Next steps

For any interested party



More information

Feel free to contact us.
Sintef Energy will also take
contact and inform relevant
parties in H2 – 2025.



Demonstration

We have the aim to provide
demonstration and testing through
our vLAB environment in 2026.



Contact

Knut Espen Bergby

Knut.Espen.Bergby@sintef.no

Stefan Jaehnert

Stefan.Jaehnert@sintef.no



Trident

Mastering the power of water

Powered
by

