Hydro Québec

# Notice

# Migration to PSS®E 36

## CONCEPTION INTÉGRÉE ET OPTIMALE DU SYSTÈME ÉNERGÉTIQUE (CIOSE)

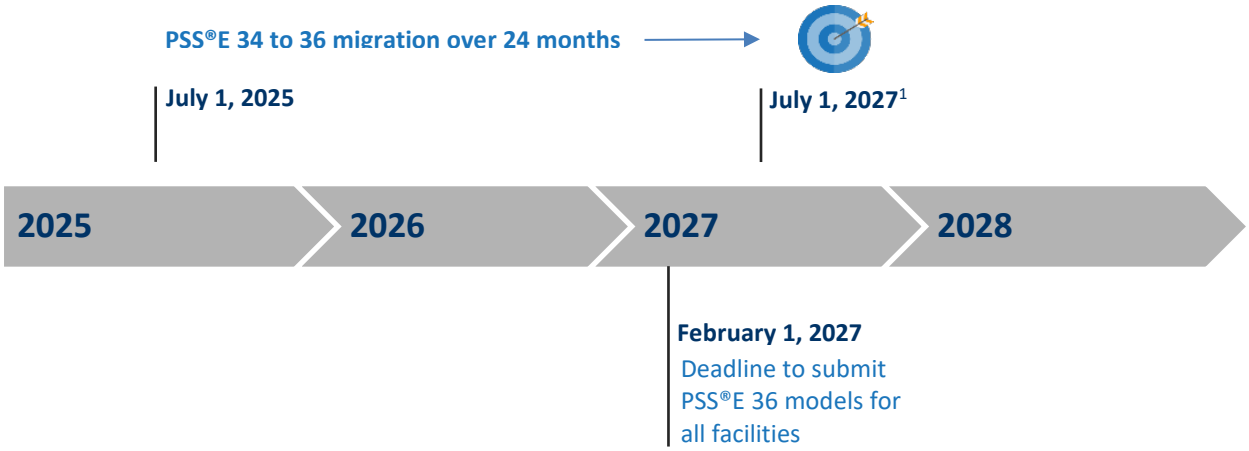
July 11, 2025

**Notice of transition from PSS®E 34 to PSS®E 36 over the next 24 months**

## CONTEXTUAL OVERVIEW

Hydro-Québec, in its role as Planning Coordinator and Transmission Planner, is responsible for maintaining up-to-date models (steady-state, dynamics, and short-circuit) of the Quebec Interconnection transmission system. Hydro-Québec currently uses Siemens PSS®E version 34.8 to create simulated scenarios used in transmission system planning studies and reliability analysis of the Quebec Interconnection.

Over the next 24 months, Hydro-Québec will initiate a transition from version PSS®E 34.8 to PSS®E 36 and requires the contribution of all stakeholders to achieve this objective by July 1, 2027[1]. Accordingly, each stakeholder has until **February 1, 2027**, to submit PSS®E 36 compatible models of their existing and planned facilities.




During this transition period, which extends until July 1, 2027[1], models of existing facilities submitted under the MOD-032-1 process, as well as those for planned projects, must be compatible with both PSS®E 34.8 and PSS®E 36. Separate .dll files may be required for each version.

Hydro-Québec will update its requirements documents following the transition to PSS®E 36 to reflect this change. Please note that additional data will also be required in the near future to support the new functionalities of PSS®E 36.

[1] If necessary, the target date will be updated in the coming months to align with the Eastern Interconnection transition plan, which remains unknown at this time.

## TECHNICAL JUSTIFICATION

- PSS®E 34 reached its end-of-life in August 2023;
- Identified vulnerabilities in Python versions compatible with PSS®E 34;
- Fixes and improvements to the computational engines of PSS®E 34;
- Increased modeling detail and expanded analytical capabilities;
- User defined dynamic models in PSS®E 36 are compatible with future versions, ensuring long-term sustainability of simulation models.

## TECHNICAL INFORMATION

A major architectural change for the creation of dynamic models is introduced in PSS®E version 36. Specifically, dynamic models no longer have direct access to the internal data structure of the PSS®E simulation engine, and all source code must be converted to use API functions (i.e., pssdynmdl). This new dynamic model format, called VINDP[2], is expected to be compatible with future versions of PSS®E, which will reduce the effort required from all stakeholders during future transitions. Below are some relevant technical details to bear in mind during the transition:

- CONEC and CONET model types are no longer supported and must be converted to the appropriate CCT types;
- The LPDEV command used to interact with the progress is no longer supported and must be replaced by the PROGRESS command and the DBUF01 buffer;
- Siemens provides a tool to convert source code into the VINDP format using the utility: *PSSE User Model Compile/Link – Environment Manager*;
- Siemens has indicated that support requests related to the transition of user defined models to the VINDP format are prioritized on its support platform;
- All standard models should be validated using PSS®E 36 to ensure parameter compliance and numerical solution accuracy;
- Models must be compiled using the ***Intel® Fortran Compiler*** **(ifx)** from the **Intel OneAPI 2025.1.0 toolkit or newer**, as specified by Siemens.

## REFERENCES AND RESOURCES

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|---|---|
| **Hydro-Québec :** Connecting to Hydro-Québec's system | https://www.hydroquebec.com/transenergie/en/connecting-to-hydroquebec-system.html |
| **Hydro-Québec :** Modeling the transmission system | https://www.hydroquebec.com/transenergie/en/system-modeling.html |
| **Siemens :** Information and support | https://www.siemens.com/global/en/products/energy/grid-software/planning/pss-software.html |

**For further information, please contact:** TEDonneesdemodelisation@hydroquebec.com

[2] Siemens acronym for *Version Independent User-Defined Dynamic Models*