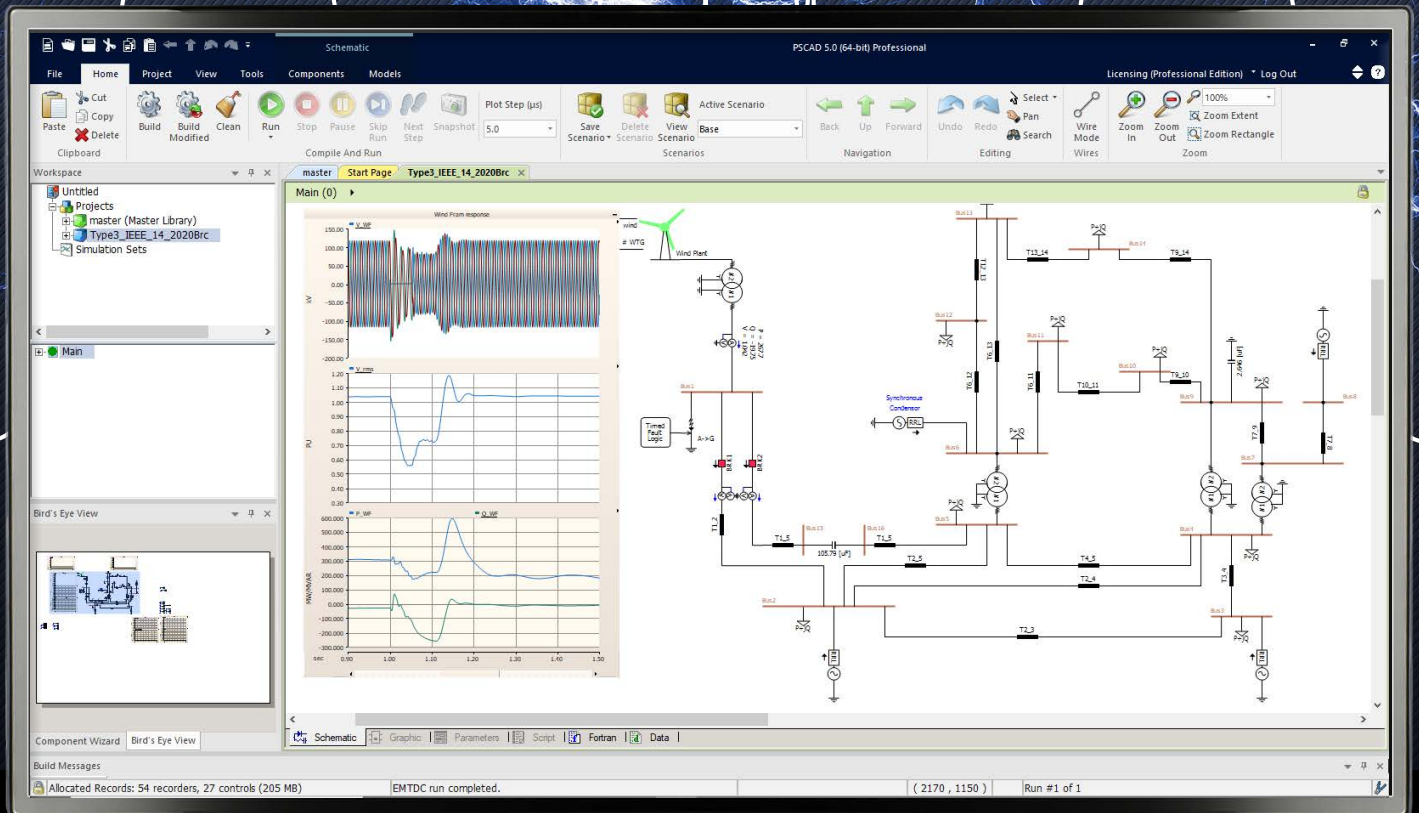


# PSCAD



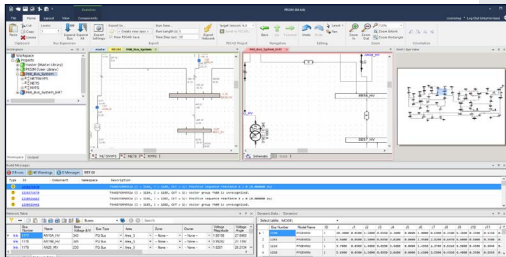
## PSCAD V5

With the advent of renewables and their complex controllers, Electromagnetic Transients (EMT) simulators have advanced beyond a design and problem solving tool for small, localized systems. EMT simulations are now a necessity in the design of large electric grids.

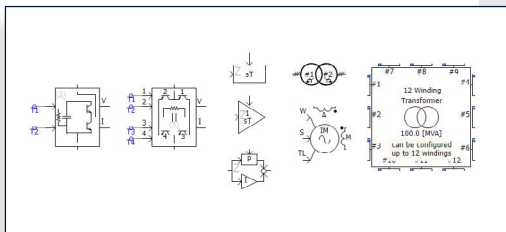
In this new era, PSCAD V5 harnesses the power of parallel computing, enables powerflow data migration, and permits full application automation via scripting. These new features ensure that the simulation of large electric networks, is faster and more efficient than ever.

[pscad.com](http://pscad.com)

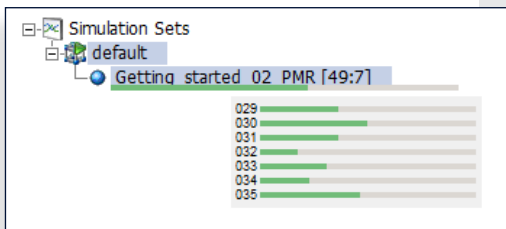
Powered by Manitoba Hydro International Ltd.



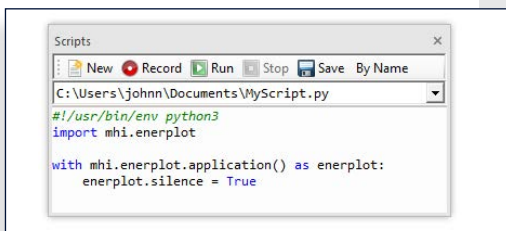
Conversion from Powerflow Data with PRSIM



New Models



Parallel and High Performance Computing



Application Automation with Python Script

## • Conversion from Powerflow-type Data

Used in combination with an add-on product, PRSIM, PSCAD can translate both PSS/E and DigSilent PowerFactory data file types, directly into PSCAD format. The converted PSCAD case will have operating conditions comparable to the settings of the original network data file (steady state load flow). V5 comes complete with a network equivalents calculation utility called NETEQ.

## • New Models

More than 20 new models have been added to the V5 master library. Included is a library of MMC models, a phase-domain synchronous machine, a single-phase induction machine, and a library of z-domain models. A brand new 3/5-limb, duality concept-based transformer model is also included.

## • Parallel and High Performance Computing (HPC)

In addition to the existing HPC features, V5 includes an enhanced Parallel Network Interface (PNI) that connects processes running on different time steps. In addition, Parallel Multiple Run (PMR) functionality has been enhanced, including the ability to set the maximum volley and override project settings.

## • Application Automation with Python Script

Automation utilizing the Python script language is embedded directly into V5. Users can maintain their scripts from within PSCAD, using a new script pane, from which custom scripts may be recorded, edited or launched.

## • Algorithmic Enhancements

EMTDC now includes a Modified, Augmented Nodal Analysis (MANA) algorithm. This enables the implementation of voltage/current dependent voltage/current sources (included in the V5 master library). In addition, a newer sparse solution, which is beneficial when solving larger subsystems, is implemented. The new solution is automatically utilized if the number of nodes in a subsystem is over 200 (default).