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- DEMS utilises Deep Learning (DL) based prediction models to address the inherent uncertainty within Distributed Energy Resources (DER) like wind and solar.
- Maintaining the sustainable communities' framework in view of environmental and socio-economic objectives, DEMS promotes optimal EV charging and the favorable scheduling of prosumer electric power according to their respective requirements.
- DEMS plays a vital role in diminishing the carbon dioxide emitted from conventional electrical power generation by facilitating the augmentation and integration of Renewable Energy Sources (RES) into the power system.
- This research project espouses a solution that supports three of the United Nations 17 Sustainable Development Goals (SGDs) namely; Affordable and Clean Energy, Sustainable Cities and Communities, and Climate Action.

DEMS Architecture

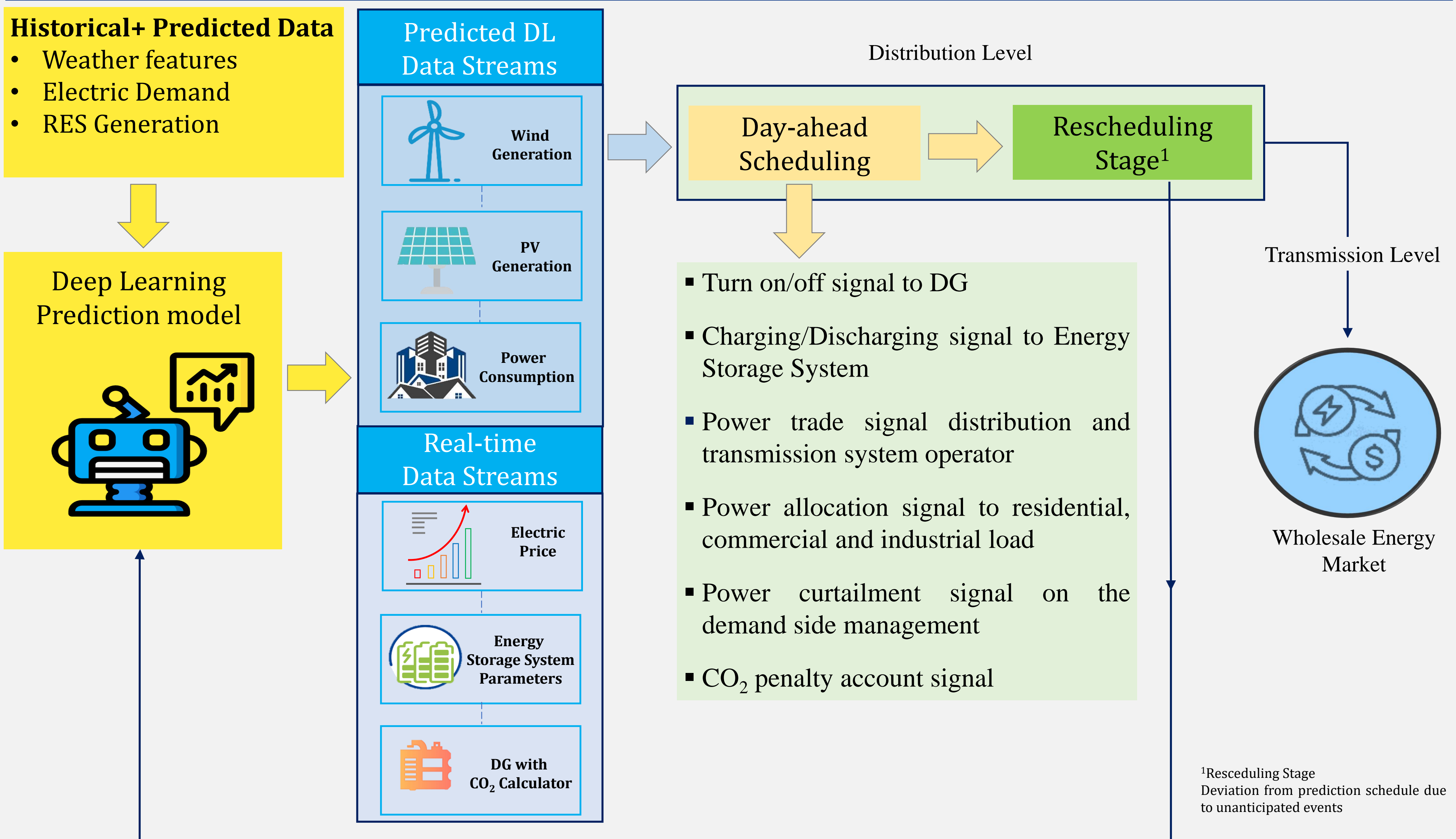


Fig. 1. Overview of the proposed DEMS for a smart community on the Distribution side

- The accuracy of Deep Learning-based forecast models is reliant on large datasets. Through the utilisation of data streams from smart meters and collaboration with utility companies, DEMS can assist in accomplishing certain identified UN SDGs.