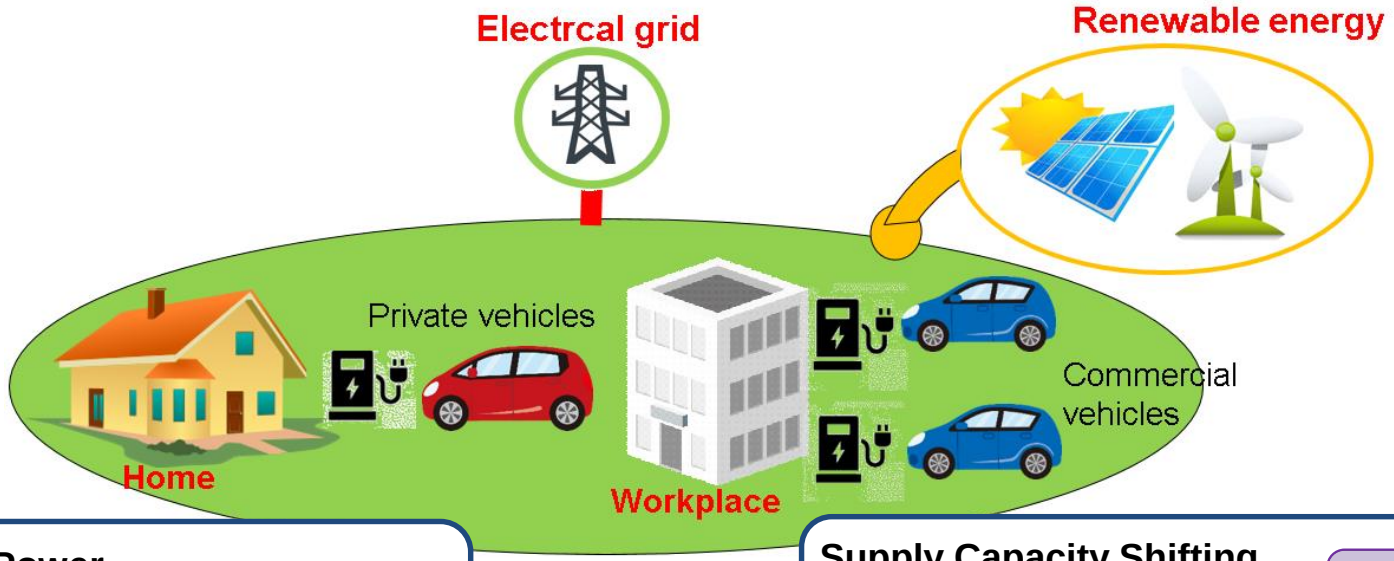
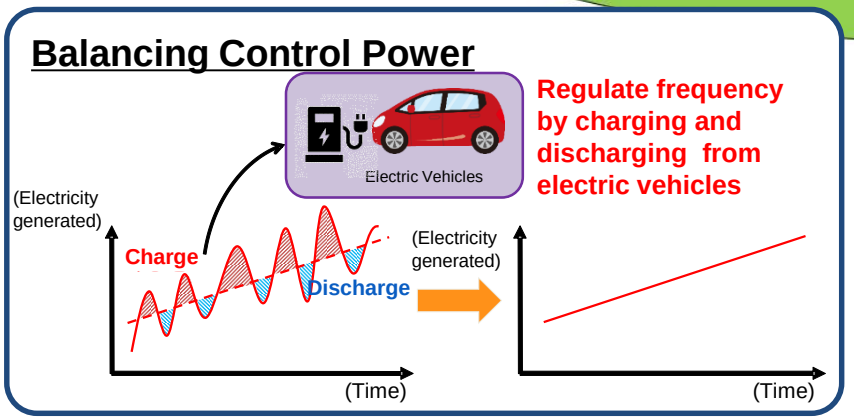
Purpose of Demonstration Project

As the use of renewable energy expands, increased fluctuations in output and generation of excess electricity can be expected in the future. This project aims to build a system which utilizes PHVs/EVs in order to adjust fluctuations and shift the supply of renewable energy capacity by collectively charging/discharging electricity from storage batteries of PHVs/EVs.

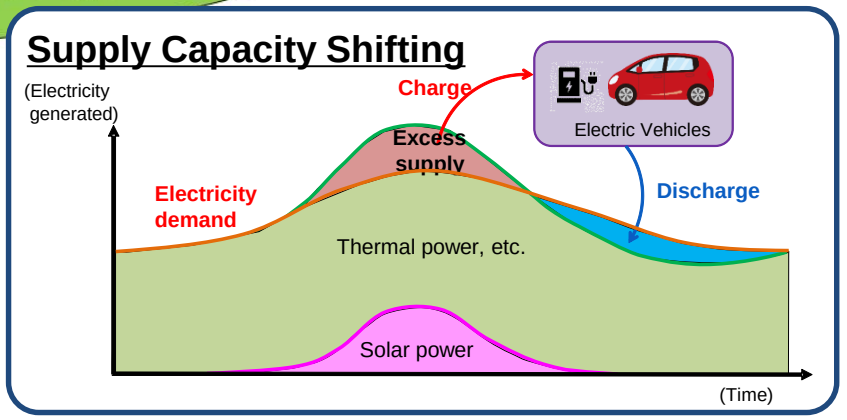


Balancing Control Power



Regulate frequency by charging and discharging from electric vehicles

Supply Capacity Shifting



- Accelerate the introduction of PHVs/EVs, which only have low negative environmental impacts, by providing new values of PHVs/EVs with bi-directional chargers.
- Reduce the cost of demand and supply adjustment of electricity by acquiring new types of Distributed Energy Resources, which results in further diversification

Contribute to the realization of a low-carbon society and stable supply of electricity

Scope and System Composition of Demonstration Project

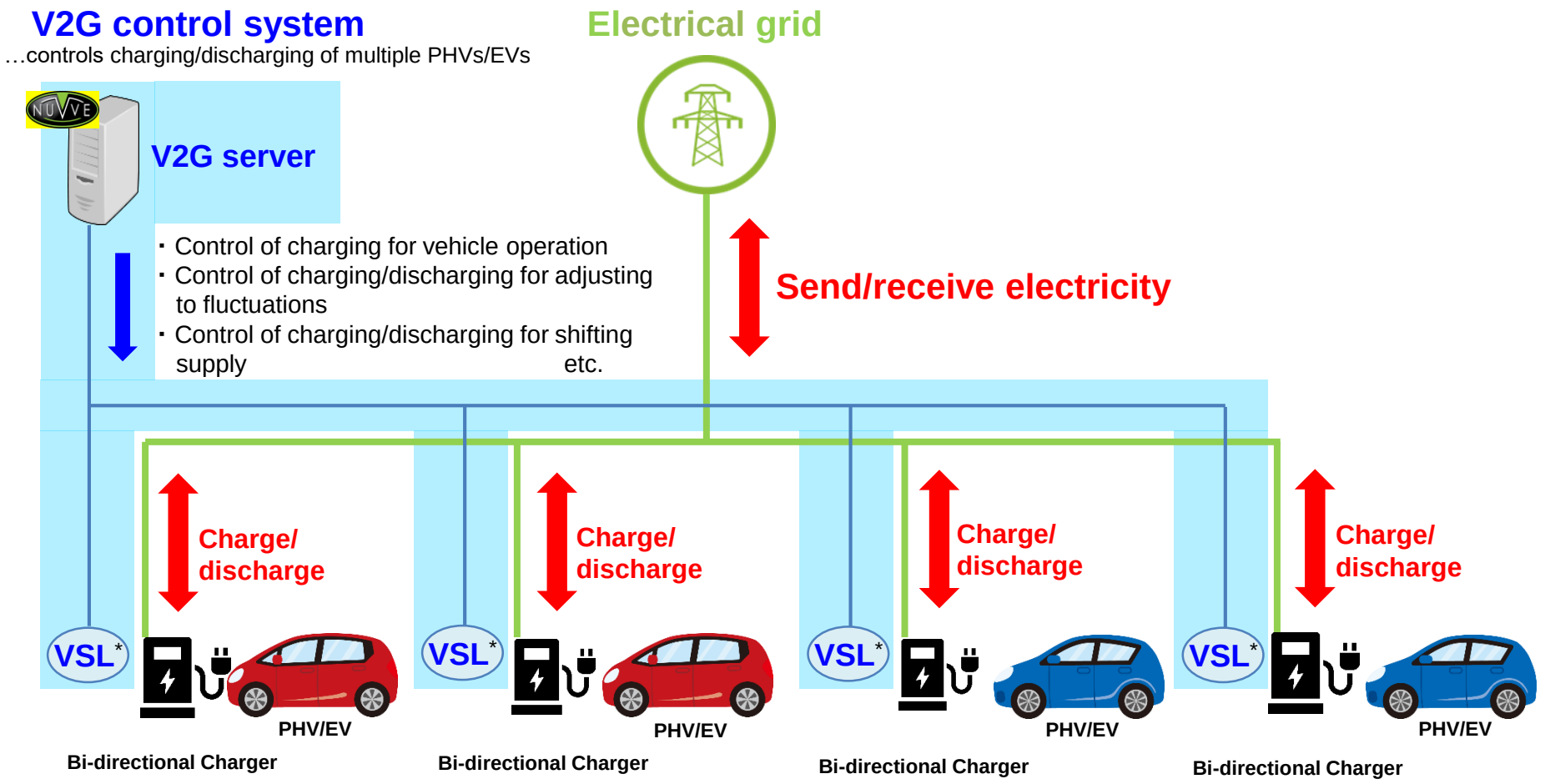
(1) Development of V2G Control System (Toyota Tsusho)

- ✓ Install bi-directional chargers which can dispatch electricity back to the electrical grids at parking facilities in Toyota City.
- ✓ Build V2G control system (PHVs/EVs aggregation system) by linking Nuvve's V2G server with bi-directional chargers.

(2) Evaluation of Impact on Electrical Grids

(Toyota Tsusho, Chubu Electric Power)

- ✓ Evaluate responsiveness in adjusting to fluctuations based on commands from the V2G control system.
- ✓ Evaluate impact on electrical grids due to backfeeding from bi-directional chargers.



* VSL: Vehicle Smart Link, a module developed by Nuvve for communication with its V2G server.

Schedule of Demonstration Project

	FY2018			
	First half		Second half	
Development of V2G Control System	Post-selection to around Oct. 2018			
Analysis of Outcome from Charging/Discharging Experiment			Around Oct. 2018 to around Feb. 2019	
Submission of Report				★ Around Feb. 2019