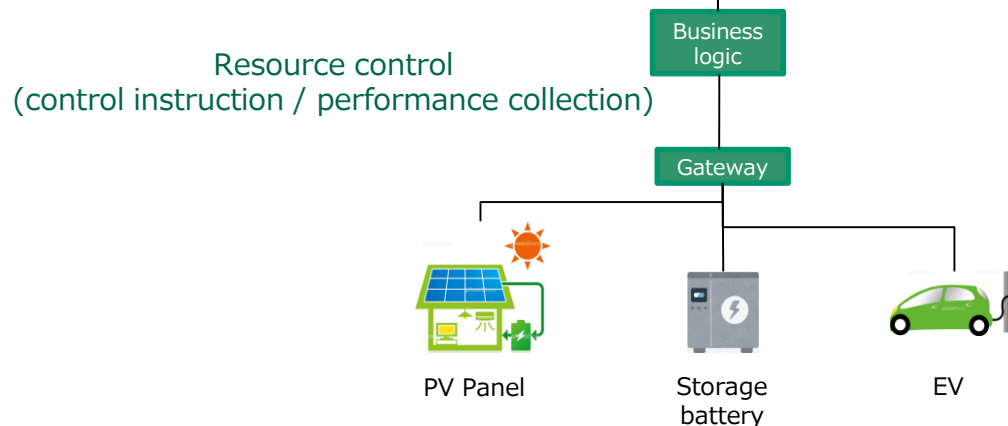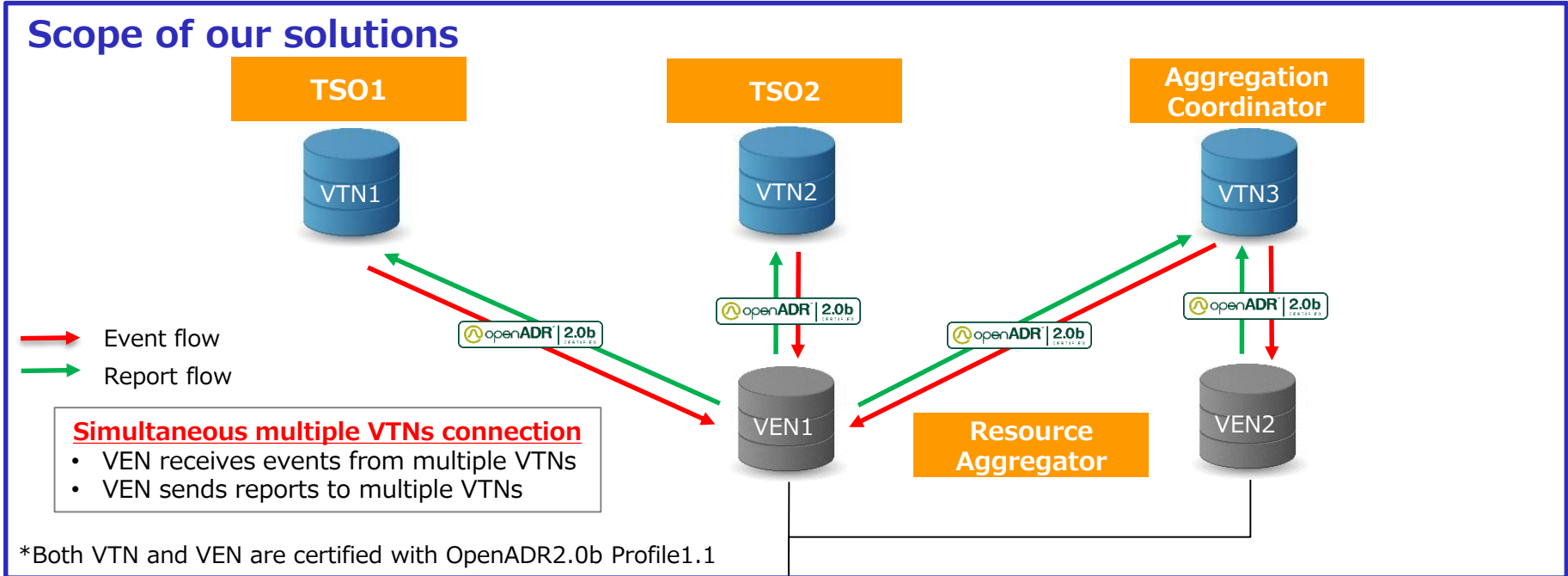# OpenADR Solutions

Grid Solutions, Inc.

OpenADR Solutions

Functions of our OpenADR Solutions

It is equipped with functions that comply with the supply and demand adjustment market and the capacity market.

VTN (Virtual Top Node)

- Communication with VEN is done with the protocol defined by OpenADR.
- VTN dispatches DR events to multiple VENs and receive reports from multiple VENs.
  - ✓ VTN1 and VTN2 send DR events to VEN1, and VTN3 sends events to VEN1 and VEN2.
  - ✓ VTN1 and VTN2 receive the DR report from VEN1, and VTN3 receives reports from VEN1 and VEN2.
- VTN can be linked, via Rest API, with other software such as business logic.

VEN (Virtual End Node)

- Communication with VTN is done with the protocol defined by OpenADR.
- VEN receives DR events from multiple VTNs and sends DR reports to multiple VTNs (*Simultaneous multiple VTN connection)
  - ✓ VEN1 is registered in VTN1, VTN2, and VTN3, and VEN2 is registered in VTN3.
  - ✓ VEN1 receives DR events from VTN1, VTN2, and VTN3, and VEN2 receives from VTN3.
  - ✓ VEN1 sends DR reports to VTN1, VTN2, and VTN3, and VEN2 sends reports to VTN3.
- VEN supports : "baseline report", "performance report", and "controllable amount report".
- VEN can be linked, via Rest API or gRPC, with other software such as business logic.
- VEN supports multi-factor authentication at login.

Company Overview

- ☐ Company   Grid Solutions, Inc
- ☐ Location   Suite 311 5-26-8 Kamata Ota-Ku Tokyo 144-0052
- ☐ Founded   April 2012
- ☐ CEO   Yohei Takahashi
- ☐ Bank   SMBC Kashiwa Branch
- ☐ Business   Development of Smart grid, Demand Response, VPP solutions
    - ✓ OpenADR solutions
        - OpenADR2.0b certified（VTN, VEN）
    - ✓ VPP solutions
    - ✓ AI-based forecast engine
    - ✓ Participated in the Capacity Market, and Demand and Supply Adjustment Market