

Overview

ISONA Renewable Energy Management Solution

ISONA offers a wide range of options for managing renewable energy sources (such as solar PV, wind power, biogas, and hydropower plants) via its **Automation WebCenter** (web portal). This includes both the measurement of generated energy and the monitoring of systems, as well as remote access to solar loggers, PLCs, and more – for plant operators and equipment manufacturers. The solution is ideally suited for tenant electricity (PV sharing) models and for integration with direct marketing providers. Other application scenarios are also possible, as the Automation WebCenter can be quickly and easily adapted to meet specific customer requirements. The following diagram illustrates how the ISONA components interact with renewable energy systems:

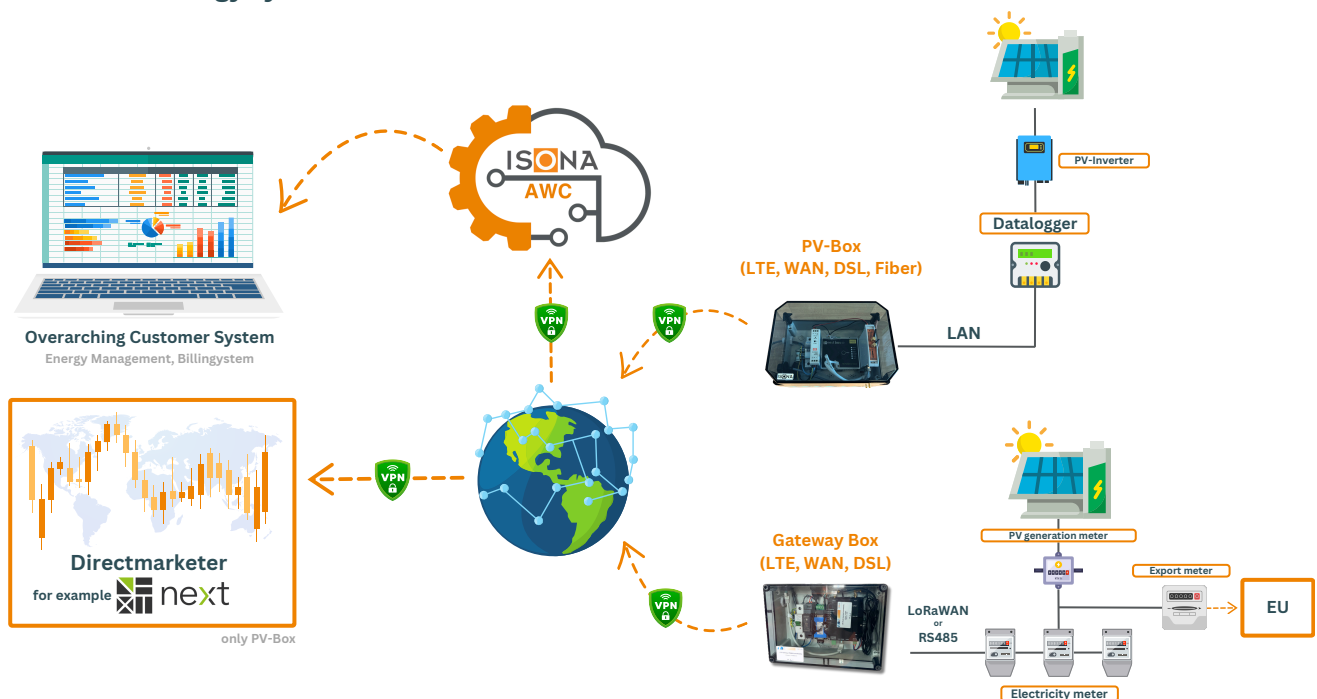


Fig.1: Overview - ISONA Renewable Energy Management Solution

At the core of the solution is the **ISONA Automation WebCenter (AWC)** – a web-based platform used to manage all **ISONA components**.

The **Secure Access Gateway (SAG)** is the central IT security component of the overall system. It functions as a VPN gateway, authentication server, certificate authority (PKI), and permission management system, as well as the central management server for all **ISONA components**. The **Secure Access Gateway** is delivered as a virtual appliance compatible with most virtualization platforms and is typically installed either on-premises or in the cloud.

The **ISONA Gateway (LTE, WAN, DSL)** is installed in the energy systems and collects energy data via RS485 interface (LMN) or LoRaWAN from smart meters (mME). This data is transmitted via the internet (LTE, DSL, or WAN) to the database within the **ISONA Automation WebCenter (AWC)**, where it can be further processed by downstream customer applications.

In addition, other LAN-capable devices (such as solar loggers, inverters, PLCs, etc.) can be connected to the **ISONA Gateway**. This enables highly secure remote access to these systems' visualizations or web frontends via the **ISONA Secure Access Solution**.

If required, the **ISONA Gateway** can also establish a connection to a direct marketer, enabling them to legally control the renewable energy system in accordance with regulatory requirements.