

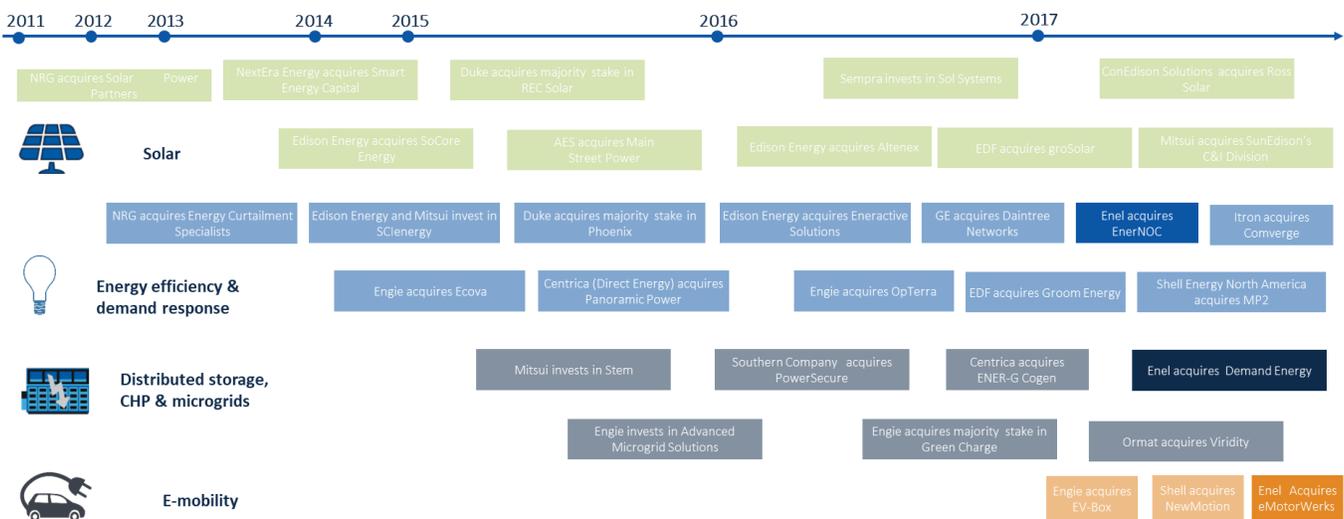
## European Utility Giants Are on a Grid Edge Shopping Spree in 2017

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Italian multi-national power company Enel Group has announced yet another grid-edge acquisition in 2017, this time tapping into the U.S. e-mobility market at the advent of aggregation of electric vehicles (EVs) for grid services. Through its recently acquired subsidiary EnerNOC, Enel acquired North American e-mobility solutions provider eMotorWerks for an undisclosed amount. This is the third acquisition of a U.S. company by Enel in 2017.

This is the latest in a series of acquisitions by Enel in the distributed energy space. It is not the only European energy giant making moves as Shell, Engie, Centrica, and EDF have acquired solar, energy efficiency and other distributed energy resource companies.

### Energy Giants Are Investing in Customer Energy Management



Source: GTM Research

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## Strategic Plan in Motion

Earlier this year Enel launched a global new business line 'E-Solutions'. The new unit is aimed at capitalizing on the ongoing transformation of the power industry with a customer centric approach focusing around four primary areas <sup>1</sup>:

- 1) E-Home & Consumer Solutions, focusing on smart home solutions;
- 2) E-City, delivering fiber optic, lighting, signaling and security solutions;
- 3) E-Industries, developing "off grid", "limited grid" and distributed generation systems;
- 4) E-Mobility, also covering recharging infrastructure and second-life batteries.

In 2017 Enel has bulked-up the E-Solutions portfolio with four strategic acquisitions in the U.S. and Europe.

## Enel 2017 Grid Edge Acquisitions

Date	Company	Value	Grid-Edge Primary Market
January 2017	Demand Energy Networks, Inc.	Undisclosed purchase price	Energy Storage
May 2017	Tynemouth Energy Storage Limited stand-alone battery energy storage system (25MW- 12.5 MWh)	Undisclosed purchase price; project investment including construction is expected to total 20 million Euro	Energy Storage
August 2017	EnerNOC	300 million USD	DER Services
October 2017	eMotorWerks	Undisclosed purchase price	Electric Vehicle Infrastructure

Source: GTM Research, Grid Edge Data Hub

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### Analyst Perspective: What You Need to Know

Enel Group 2017-2019 Enhanced Strategic Plan Focus on Customers and Digitization

- Digitization is backed by a 4.7 billion Euro investment to digitize Enel's asset base, enhance connectivity, operations and processes
- Emphasis on enhancing customer operations for Enel's portfolio of over 60 million end-users
- Seeking operational efficiency mainly from OPEX reduction resulting from digitization efforts
- Strong focus on networks and renewables for industrial growth

<sup>1</sup> <https://www.enel.com/en/media/press/d201705-enel-launches-e-solutions-a-new-global-business-line.html>

## The Unique Grid-Edge Opportunity of eMotorWerks

eMotorWerks' JuiceNet energy services platform optimizes electric-vehicle (EV) charging with real-time electricity pricing and availability of renewables, allows for remote access control and usage tracking in addition to providing the opportunity to participate in grid services. JuiceNet was first deployed with the company's JuiceBox charging station. Currently, JuiceNet is made available via software-as-a-service, hardware plugins for existing third-party EV supply equipment (EVSE), and the JuiceBox EVSE hardware and firmware reference design.

- 25,000 JuiceBox charging stations deployed to date.
- As of early 2016, 90% of customers are in the U.S. and 10% abroad.
- In the acquisition press release, Enel noted it has already installed nearly 5,000 charging stations in Europe and Latin America (Italy Spain Romania, Greece, Chile, Colombia and Argentina).
- Partnership network announced in the past year: Chanje, EDF, Volta, Share&Charge, AeroVironment, Con Energy, Nayax.

eMotorWerks' has been the only EV flexibility provider to win capacity in the California demand response auction mechanism (DRAM). For the 2016 and 2017 DRAM eMotorWerks' committed EV-charging load curtailment from its JuiceNet network of EV charging stations. In addition to day-ahead market participation, JuiceNet resources participated in the real-time energy market. In 2016 utility flexibility commitments include 900 kilowatts for SCE, 300 kilowatts for SDG&E, and unspecified capacity for PG&E. In the 2017 DRAM, eMotorWerks' committed 450 kilowatts in SDG&E and an undisclosed amount in PG&E's 56.4 MW portfolio.

eMotorWerks' is no stranger to working with a demand response aggregator, having partnered with Ohmconnect for Plug-In Electric Vehicle Submetering pilot in PG&E, SCE and SDGE.

Participation in both utility and wholesale flexibility programs, both standalone and in partnership with aggregators gives eMotorWerks a unique edge for distributed energy resource aggregation. Working with EnerNOC will allow for unique pairing and optimizations strategies for both utilities and customers seeking to stack various value streams.

## This is Only the Beginning of a Grid-Edge Shopping Spree

Enel's E-Solutions shopping spree is just getting started, with large pockets of opportunity remaining to be filled in its four focus areas. Last week Enel's CEO<sup>2</sup> Francesco Starace told Bloomberg that it is in the market for more battery storage. Battery storage will likely be next, but not the last acquisition from Enel with entire market segments such as smart home solutions and smart cities remaining to be tapped.

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<sup>2</sup> <https://about.bnef.com/blog/enel-to-seek-more-deals-in-energy-storage-business-ceo-says/>