

# Future, is it SMART ?

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ASM TERNI L.t.d.

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## BACKGROUND:

ASM Terni L.t.d. is:

- ▶ a public company controlled 100% by Terni Municipality;
- ▶ a multi-utility company operating in the Terni territory from 1960;
- ▶ the provider of:
  - Electricity services;
  - Water service( potable water grid, wastewater treatment);
  - Natural Gas service;
  - Urban Sanitation service(sweeping, waste collection and treatment);
  - Production of energy (from: biomass - organic waste, photovoltaic and hydroelectric)

for 115.000 Residents – 65 000 Customers

## ELECTRICAL DISTRIBUTION

### GENERAL FEATURES

- Area Served: 221 km<sup>2</sup>
- HV/MV substations: 3

### MV line

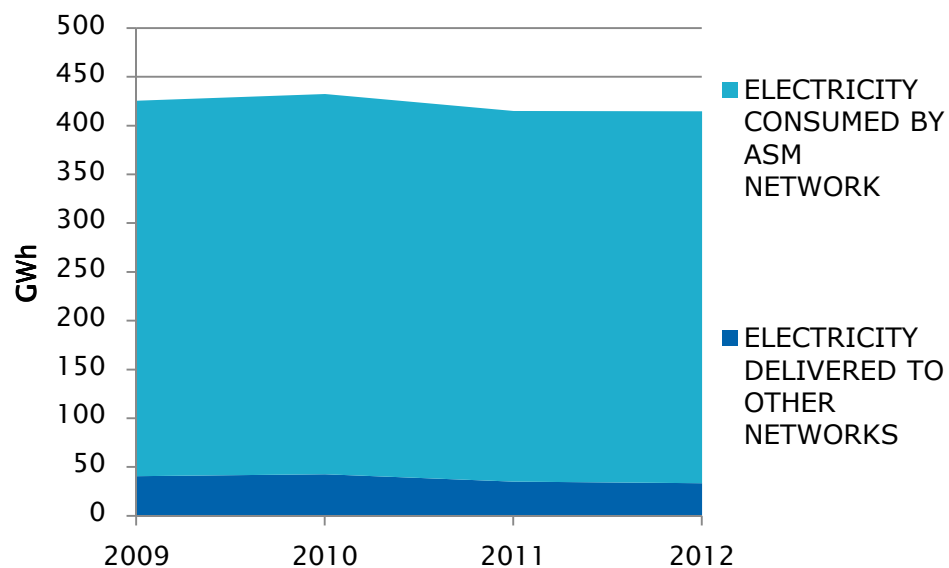
- Length: 618 km
- MV/LV: 595
- Electrical voltage: 10 e 20kV

### LV line

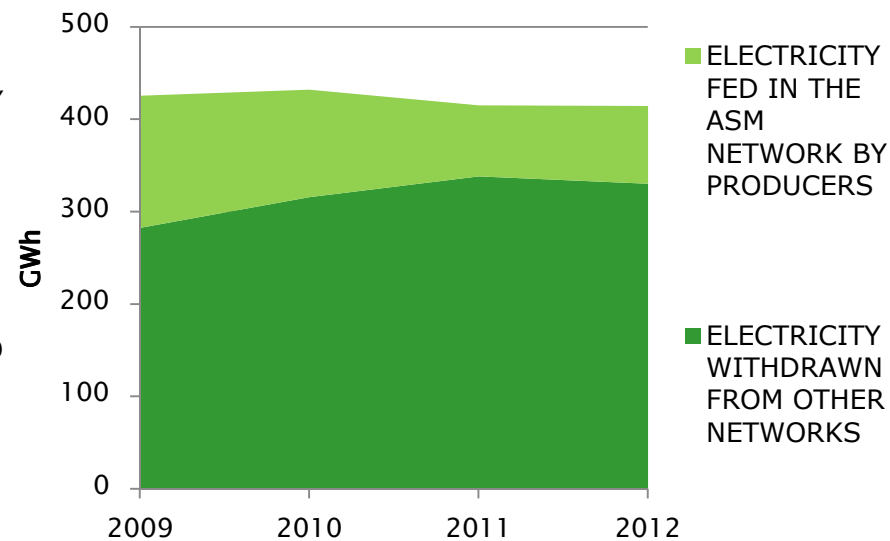
- Length: 1410 km
- Users: 64.500
- LV electrical power used 272 MW

# ELECTRICAL DISTRIBUTION

TREND OF THE OUTGOING ENERGY FROM ASM NETWORK



TREND OF THE INGOING ENERGY INTO ASM NETWORK



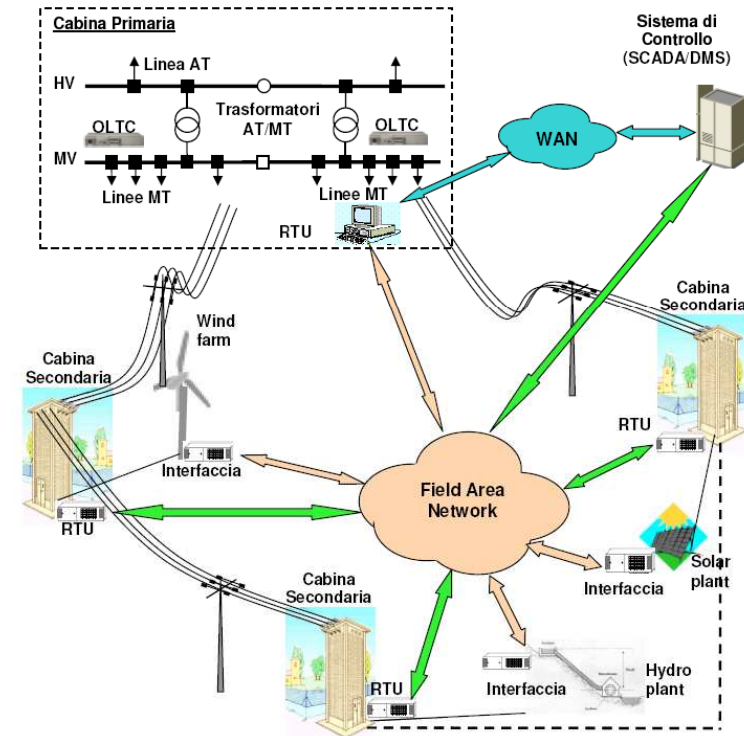
## SMART METERING

- ▶ Replacement of 95% of the conventional meters (2008-2011) in accordance with the legislation of the Authority (AEEG);
- ▶ 62.300 (96% of the total) smart meters at work;
- ▶ 9.400 remote operations (activation; contract management; contract termination; bad payers management) in 2012;
- ▶ **Smart metering benefits:** (invoices on real consumption; remote contract management; customers satisfaction; operating costs saving)



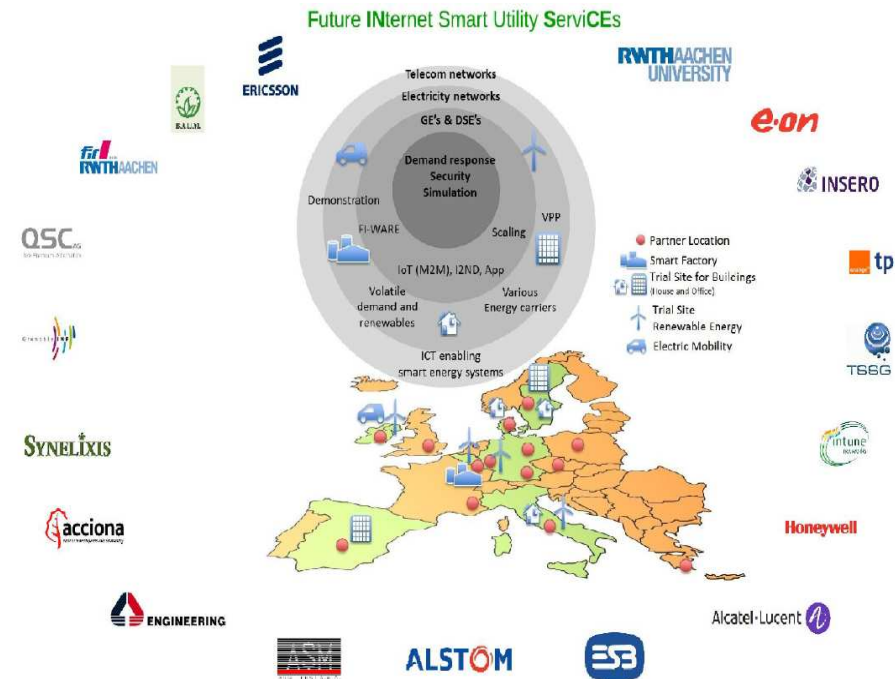
## SMART GRID

- ▶ Smart Grid Project in compliance with the values and criteria of AEEG (resolution ARG/elt39/10);
- ▶ The main **purpose** of the Pilot Project is:
  - to **develop** a grid model allowing the best possible advancement in the distribution;
  - more** effectiveness grid resources usage, keeping the levels of security and reliability of the system, as well as the level of service quality;
  - stimulate** a prosperous coordination between the producers and the distributor.



## DEMAND RESPONSE

- ▶ On-going project FINESCE:
  - **ensuring** data access for citizens, with charts for 5-minutes consumptions;
  - more **rational** power consumption;
  - **losses** reduction;
  - **price** agreements between producers, users, distributors and retailers accord to the hourly-based-pricing;
  - **marketplace** based on Future Internet



## TOWARDS THE **ELECTRIC VEHICLE**

### Overall Look

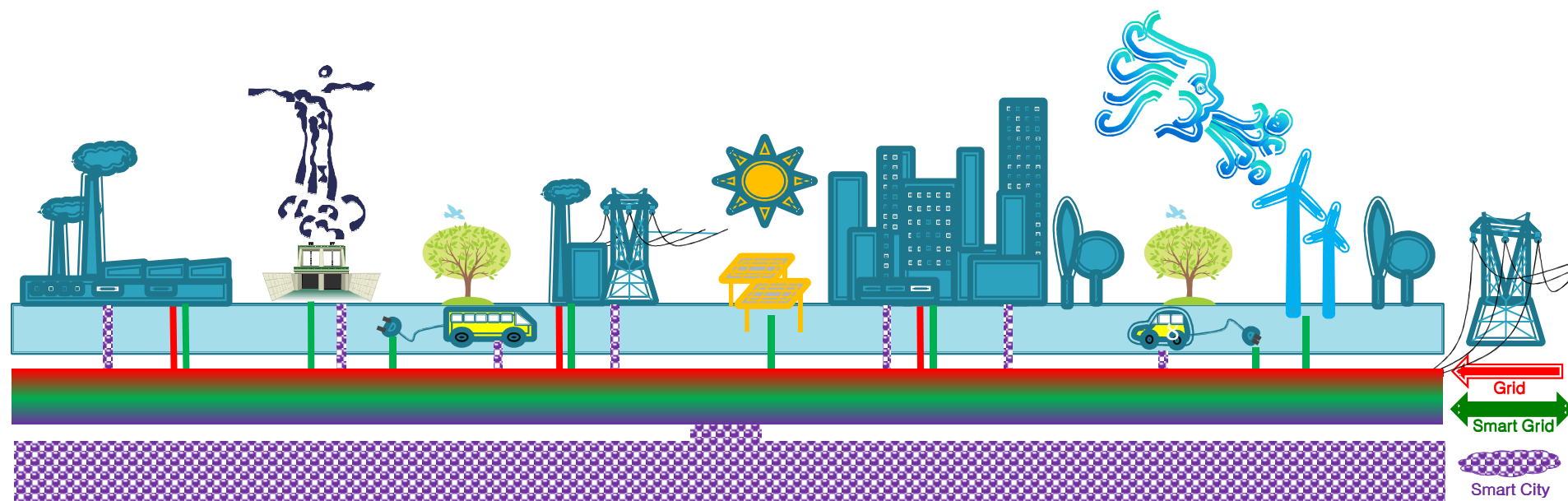
- ▶ Investments in UK, France, Germany, Spain, US, Korea;
- ▶ Positive attitude towards EV of citizens;
- ▶ 8 millions electric-hybrid vehicles by 2020;
- ▶ Increased air quality;
- ▶ Noises reduction.

### Terni & ASM

- ▶ Current use of electric bicycles and public buses;
- ▶ Techno-scientific research by ASM Terni L.t.d.;
- ▶ Necessity of charging stations;
- ▶ Studies to bridge the gap between the fueling times (electric vs gasoline);
- ▶ On-going experimentation: fast charge station (DC charge solution).
- ▶ Agreement with Enel Distribuzione L.t.d. for an interoperable platform



## TOWARDS A **SMART CITY**



## SMART CITY

*(central system connection to the devices on the grid ; data consumption analysis using a real-time monitoring tool)*

*ELECTRIC  
Smart Grid*

*WATER  
Smart Grid*

*DOMESTIC  
Smart Panel*

DEMAND  
RESPONSE  
MARKETPLACE

DISTRIBUTION  
OPTIMIZATION

ELECTRIC CAR  
PUBLIC  
CHARGING  
STATION

NOTICE FOR  
SHUT-OFFS

ALERT FOR  
EVENTUAL  
FLOODING IN  
THE AREA

WATER SAVING

DOMESTIC  
WASTE  
COLLECTION  
SERVICE

DOMESTIC  
ELECTRIC  
CAR CHARGING

GENERAL  
AUTOMATION  
APPLICATIONS

OPENING HOURS  
OF  
VENUES,  
PHARMACIES

INFOS ABOUT  
SOCIAL EVENTS

## CONCLUSIONS:

- ▶ trace a **path leading** from electric grid, passing through smart grid, demand response and electric mobility, to the creation of a smart city;
- ▶ **ICT**(Information and Communication Technology) **development**, prepared by sector workers and by consumers;
- ▶ **cooperation** agreement between passive consumers, producers, public authorities and private companies;
- ▶ to provide the usual services with a **modern approach** as well as introducing new services to the city.





Future, is it **SMART** ?

# Thank You

ASM TERNI SpA: [www.asmterni.it](http://www.asmterni.it)

