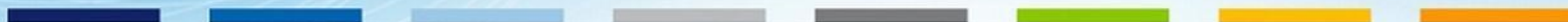




The Power of Energy

Marko Bago, PhD
smartgrid@koncar.hr



Pony Express



Contents

- About us
- Projects in progress
- A wish at the end



About us



KONČAR

ACROSS, Zagreb, 02.07.2013.

Basic data

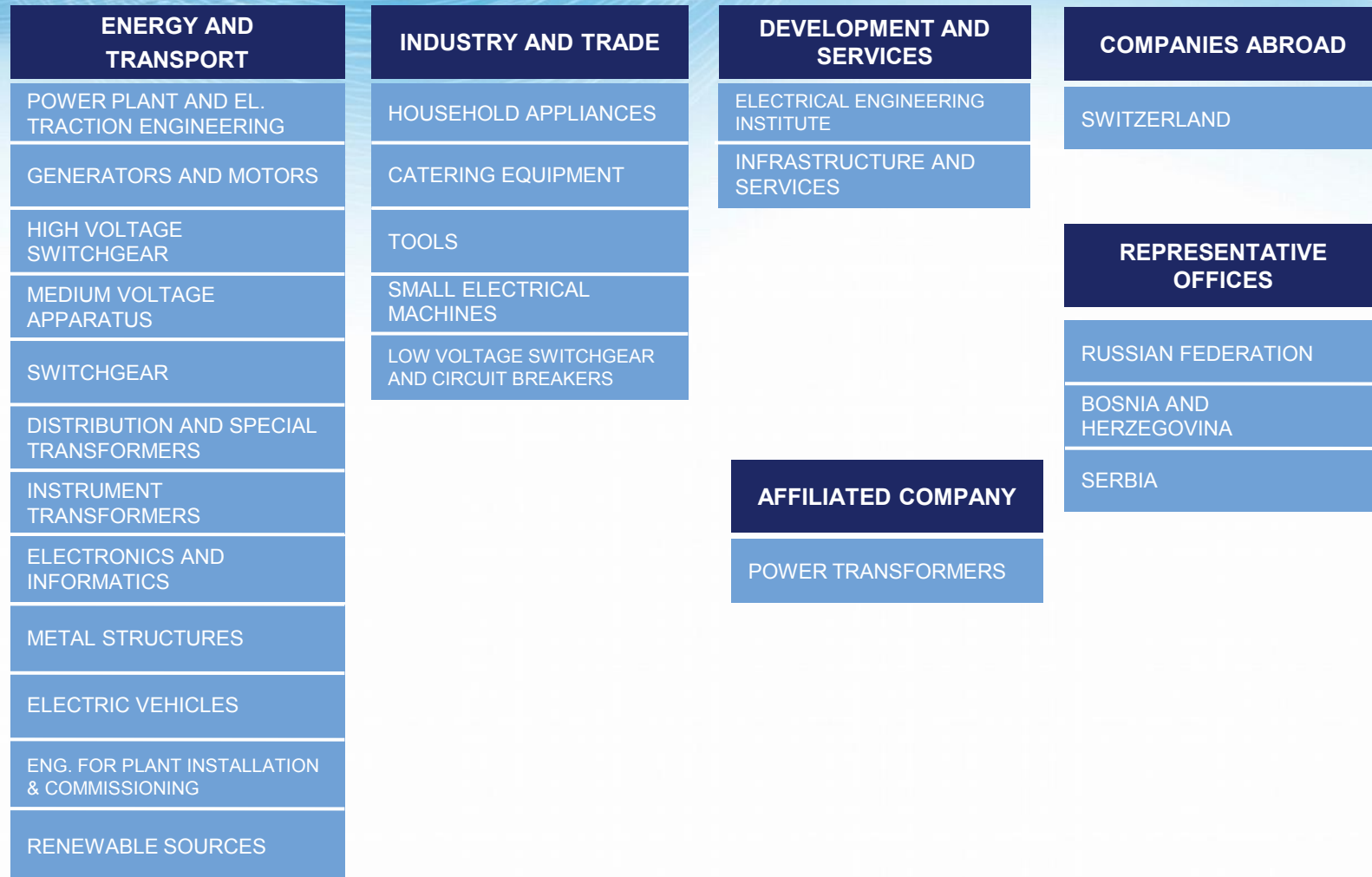
- 1921 Founded as ELEKTRA Inc. Zagreb
- 1921 Continued as Siemens d.d.
- 1946 Renamed into RADE KONČAR
- since 1991 KONČAR – ELECTRICAL INDUSTRY Inc.

Today:

- Concern
- 20 daughter companies and 1 affiliated company
- Companies and representative offices abroad in: Switzerland, Bosnia and Herzegovina, the Russian Federation and Serbia
- 3898 employees
- Sales revenue: EURO 325 mill
- Export: 50%



KONČAR – Electrical Industry Inc.



Production programme

- **Plants**
- Rotating machines
- Transformers
- Switchgear
- Electric vehicles and lineside equipment
- IT and communication
- Household appliances and catering equipment



KONČAR

Production programme

- Plants
- **Rotating machines**
- Transformers
- Switchgear
- Electric vehicles and lineside equipment
- IT and communication
- Household appliances and catering equipment



KONČAR

Production programme

- Plants
- Rotating machines
- **Transformers**
- Switchgear
- Electric vehicles and lineside equipment
- IT and communication
- Household appliances and catering equipment



Production programme

- Plants
- Rotating machines
- Transformers
- **Switchgear**
- Electric vehicles and lineside equipment
- IT and communication
- Household appliances and catering equipment



Production programme

- Plants
- Rotating machines
- Transformers
- Switchgear
- **Electric vehicles and lineside equipment**
- IT and communication
- Household appliances and catering equipment



Production programme

- Plants
- Rotating machines
- Transformers
- Switchgear
- Electric vehicles and lineside equipment
- **IT and communication**
- Household appliances and catering equipment



Production programme

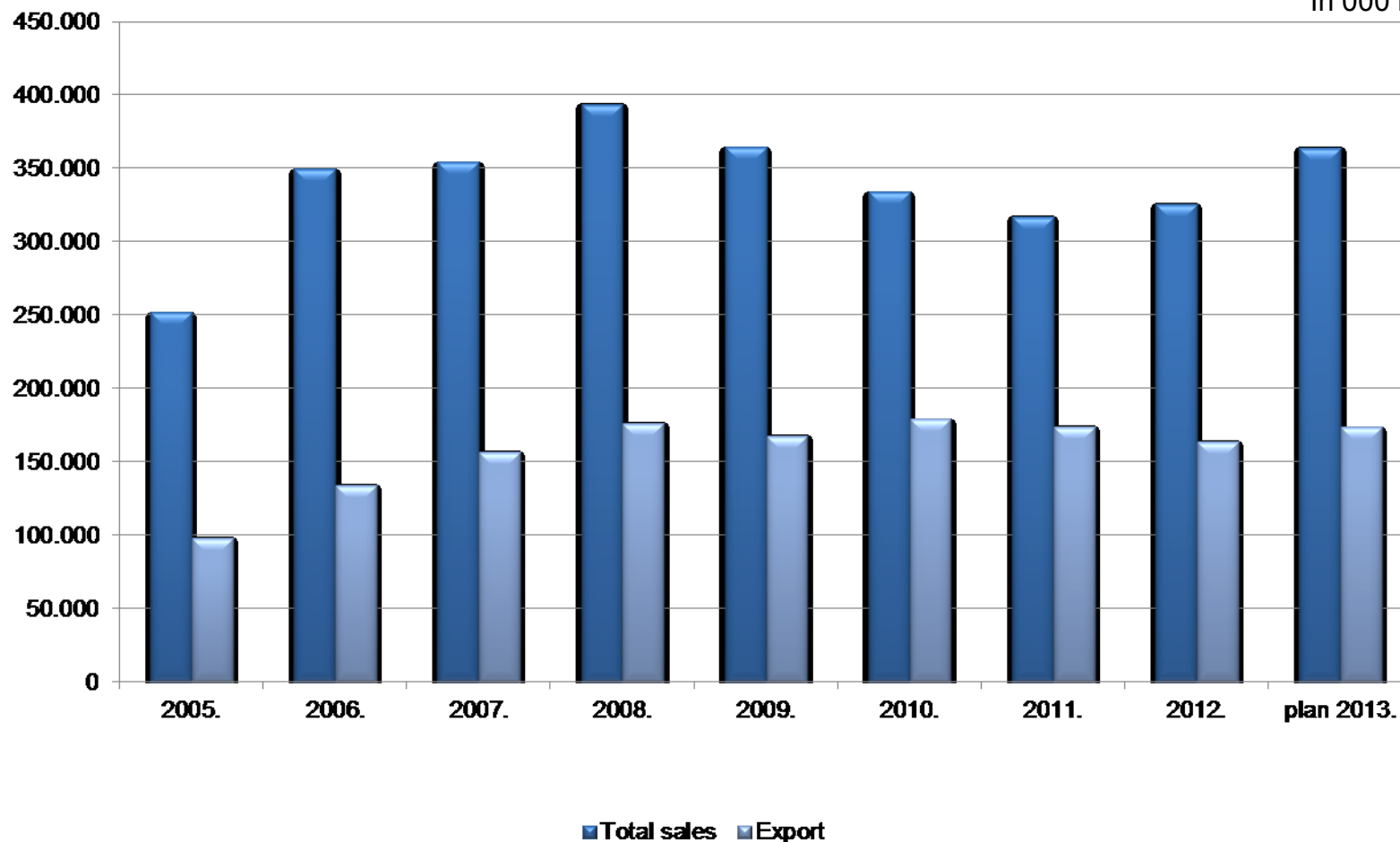
- Plants
- Rotating machines
- Transformers
- Switchgear
- Electric vehicles and lineside equipment
- IT and communication
- **Household appliances and catering equipment**



KONČAR

Total sales and export revenue

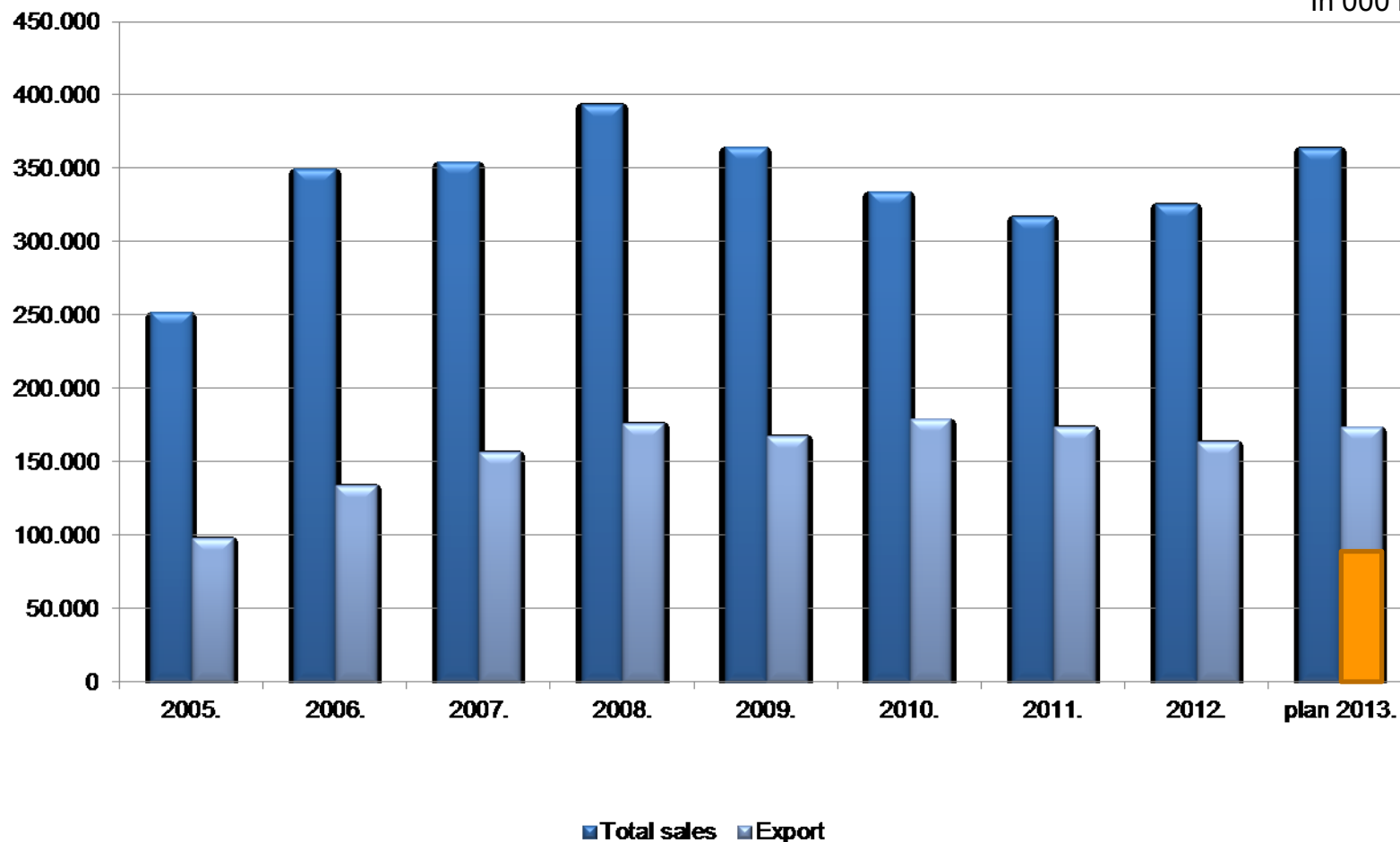
In 000 EURO



KONČAR

Total sales and export revenue

In 000 EURO



KONČAR

Research and development



- In-house research and development institute.
- Scientific and research projects in cooperation with University and other institutions.
- 90% of products resulting from in-house research and development.
- Plant and equipment “know-how”.
- In-house solution for production technologies.

Projects in progress



List of current projects

Project	Goals
Končar AMI (Advanced Metering Infrastructure)	More efficient control of energy consumption and basis for increasing energy efficiency.
Remote monitoring system for gas and oil	Wireless communication based SCADA system for remote monitoring of process variables in oil and gas transmission systems.
Remote control of line sectionalizers	Shortening out-of-power duration for individual consumers and quicker fault localization.
PROZA NET platform solutions	PROZA NET is a programming platform base for SCADA, DMS, communication converter and Wind power plant monitoring and control system available on classic computer platforms as well as on modern mobile platforms.



List of current projects

Project	Goals
Automatic Network Reconfiguration ANR (ARM-HR)	Use of algorithms for solving network reconfiguration problems in order to shorten out-of-power duration for important consumers.
Transformers, motors, generators and switchgear monitoring system	An integrated hardware and software monitoring solution scalable for monitoring of a single device to monitoring of a complete power plant.
Autonomous hybrid power supply system KONČAR Hybrid Box®	Autonomous hybrid power supply systems based on renewable energy sources for off-grid applications. Product optimisation and development of different variants.
DigiTran – Digital Substation	More efficient development of new and refurbishment of old substations where majority of development and testing is done at the system integrator premises.



A wish at the end

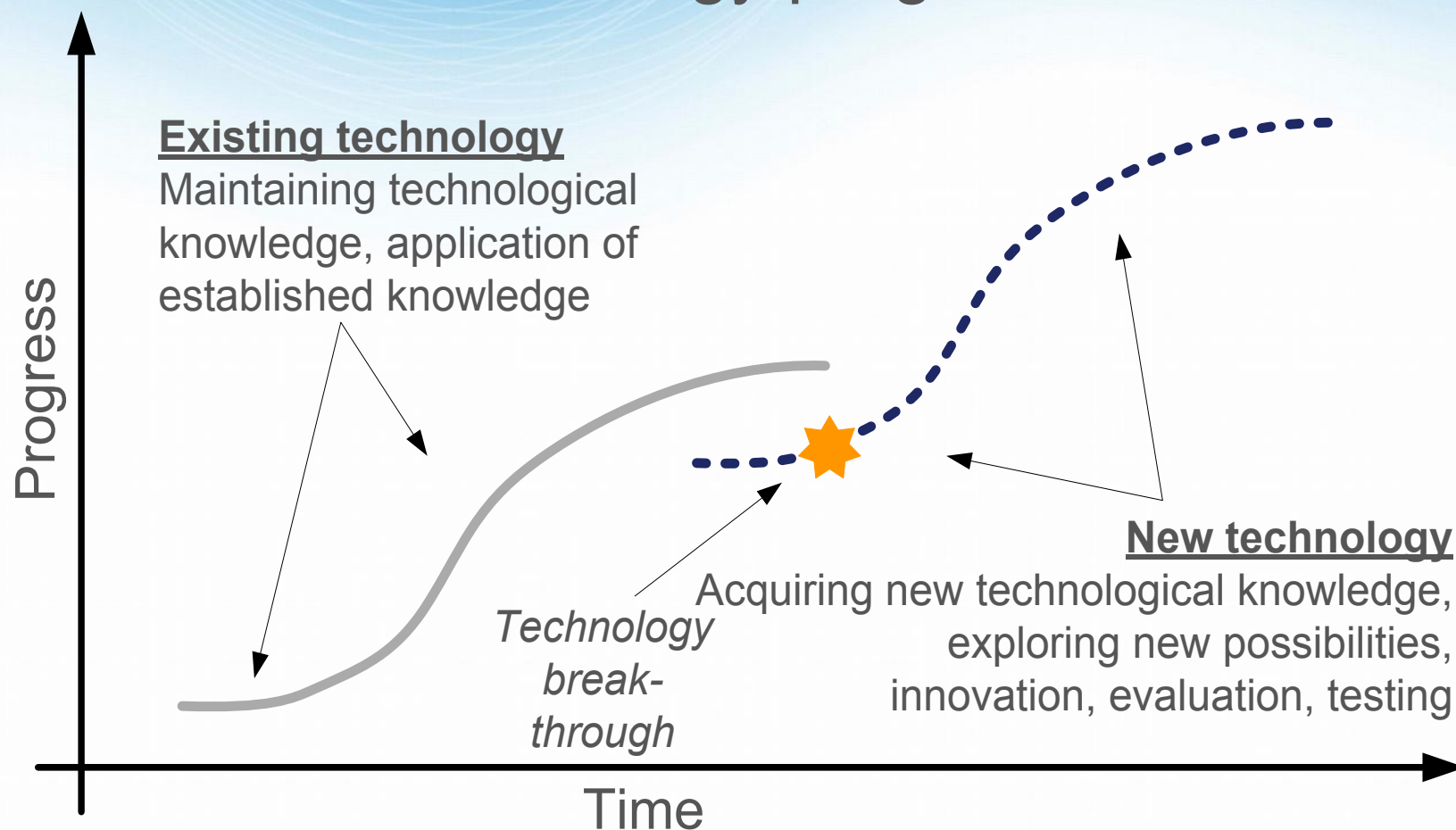


KONČAR

ACROSS, Zagreb, 02.07.2013.

Research and development

Technology progress





KONČAR

ACROSS, Zagreb, 02.07.2013.

Support for technology development

	VE Pometeno Brdo - HR
Start of project	2004.
Official opening	07/2013.
Investment cost (without subsidies)	27.28 mil. EUR
Subsidies + R&D support	0.72 mil. EUR
Total cost	28.00 mil. EUR
Subsidies + R&D / Total cost	2.57%
Investment cost / GDP (2011)	577×10^{-6}
Investment cost per capita	6.19 EUR per capita



Support for technology development

	VE Pometeno Brdo - HR	Alpha Ventus - D
Start of project	2004.	1999.
Official opening	07/2013.	04/2010.
Investment cost (without subsidies)	27.28 mil. EUR	220.00 mil. EUR
Subsidies + R&D support	0.72 mil. EUR	80.00 mil. EUR
Total cost	28.00 mil. EUR	300.00 mil. EUR
Subsidies + R&D / Total cost	2.57%	26.67%
Investment cost / GDP (2011)	577×10^{-6}	80×10^{-6}
Investment cost per capita	6.19 EUR per capita	2.69 EUR per capita



Digital substation demonstration projects

Substation	Owner	Secondary equipment	Year
Nehden, DEU	RWE	Siemens, Interopitix, Schneiwindt, SCC	2007
Corridor, USA	AEP	GE	2008
Benavente, ESP	Iberdrola	GE	2009
Papanui, NZL	Orion	GE	2009
Osbaldwick, GBR	National Grid	Areva	2009
Radcliffe, GBR	National Grid	Siemens	2009
Laufenburg, CHE	EGL	ABB	2009
Darste, ROU	Transelectrica	GE	2011
Loganlea, AUS	Powerlink	ABB	2012
Ratcliff on Soar, Drakelow, GBR	National Grid	Nari Relays	2012
Nadezhda, RUS	FGC UES	Alstom	2012
Jambua, IND	GETCO	Alstom	2012
Saumade, FRA	RTE	Alstom	2013



Conclusion

- Only constant development of new technologies enables sustainable growth.
- Technological advances enable higher standards of living, increase efficiency of energy use and preserve environment.
- Smart grid can not be bought or installed
- Every country (system) has its own unique challenges due to historical development and thus is in need of its own development plan.
- New requirements are an opportunity for a new development strategy for the energy sector in Croatia
- New goals are to be defined, and then realized, in close cooperation of regulators, operators, investors and equipment producers.
- Today there are many demonstration projects in close cooperation among research institutions, equipment producers and their customers as partners.



Conclusion

- Only constant development of new technologies enables sustainable growth.
- Technological advances enable higher standards of living, increase efficiency of energy use and preserve environment.
- Smart grid can not be bought or installed
- Every country (system) has its own unique challenges due to historical development and thus is in need of its own development plan.
- New requirements are an opportunity for a new development strategy for the energy sector in Croatia
- New goals are to be defined, and then realized, in close cooperation of regulators, operators, investors and equipment producers.
- Today there are many demonstration projects in close cooperation among research institutions, equipment producers and their customers as partners.
 - **Demonstration projects widen knowledge of all partners.**

