

# CREA

## Hydro & Energy



Czech Renewable Energy Alliance



## Cluster CREA Hydro&Energy

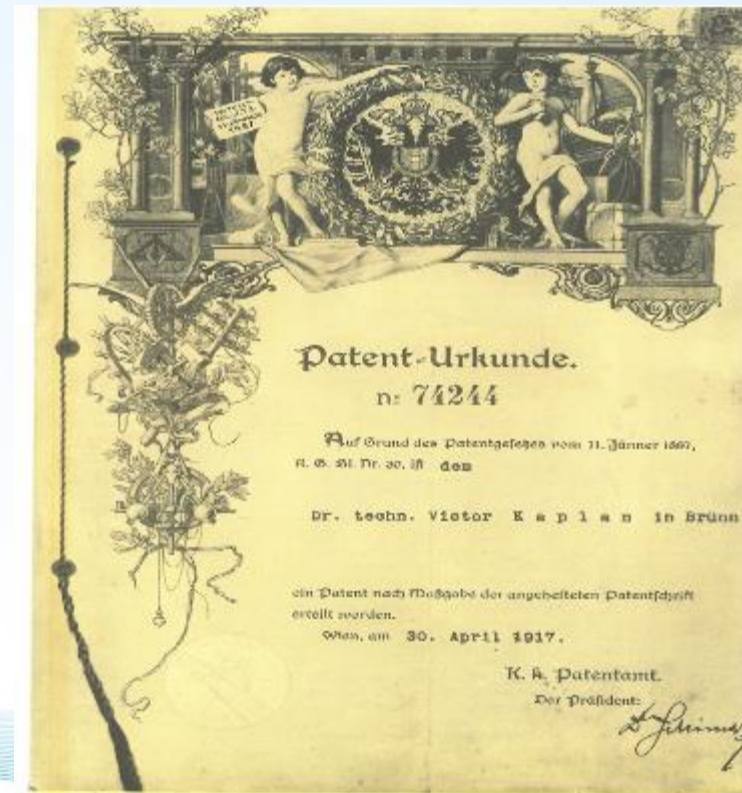
Ing. Břetislav Skácel / 8.12.2016



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***We are proud of our region giants ...***

- **Jiří Josef Kamel**
- **Gregor Johann Mendel**
- **Viktor Kaplan**



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***... and we want to follow their tradition.***

- **pumps** - Sigma Olomouc
- **constructions** - Ingstav Brno
- **turbines** - ČKD Blansko



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## ***Profile of the Cluster***

CREA Hydro&Energy, is an association of Czech companies, research institutes and universities operating in this branches:

- **Hydraulic Constructions**
- **Water and Wastewater Management**
- **Renewable Energy Resources**
- **Waste Management**



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## ***Our Mission***

„Water, Energy and Waste are three important elements of the human impact on environment. We want to assist in their combined treatment.“

*CREA Hydro&Energy, o.s. – Friendly Power*



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# ***Our way to Gold Label in Cluster Management Excellence***

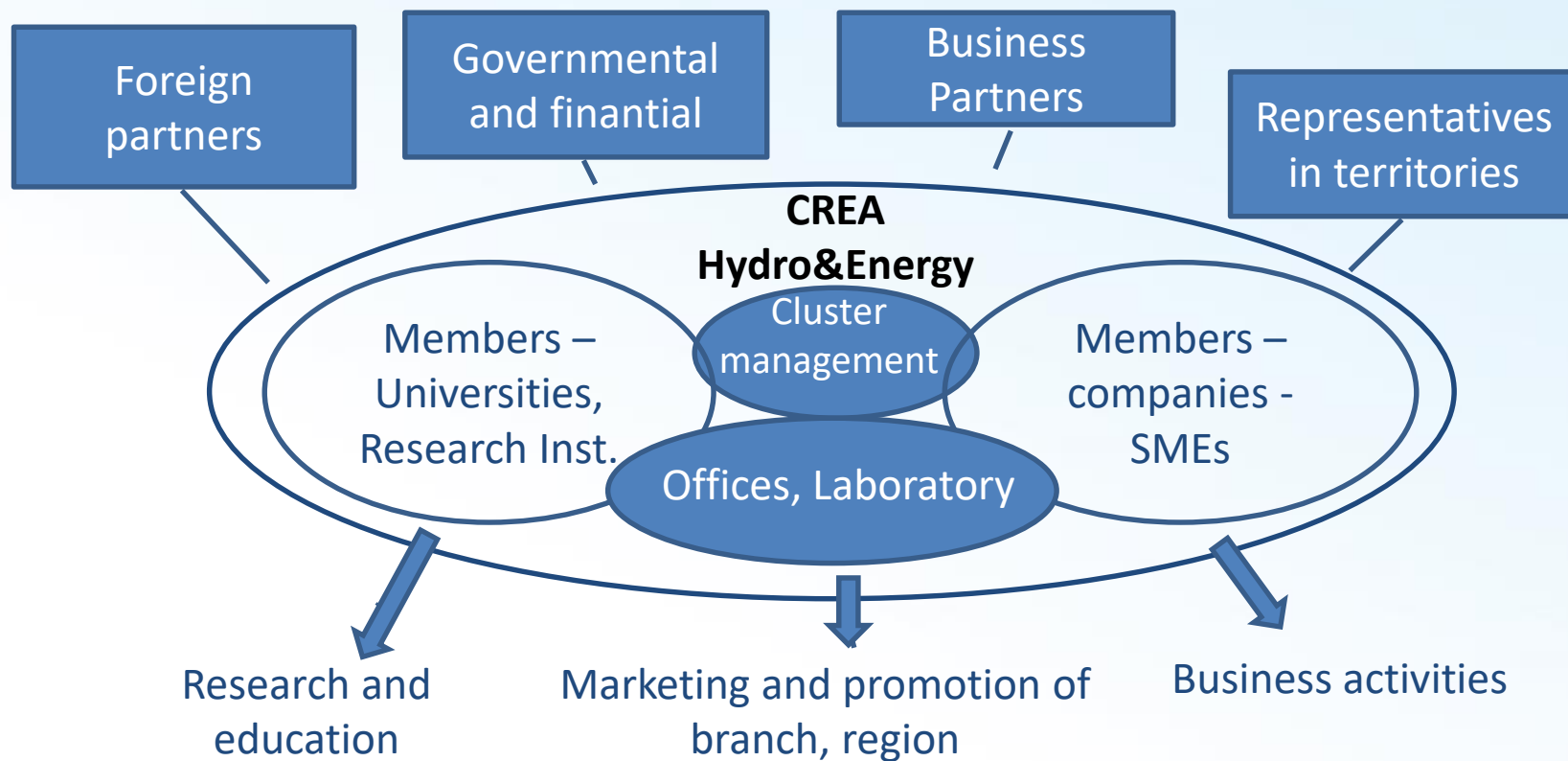
- **Bronz label in 2013**
- **On-line test in January 2015**
- **International audit in August 2015**



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# ***Structure of the cluster***



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# ***Working Groups - Research***

## **GEO-DAMS MONITORING:**

- New methods of measurement, monitoring and GIS implementation for dam safety and evaluation

## **HYDROPOWER:**

- New technology for small hydropower plants

## **SEDIMENTS:**

- New method and technology for sediment mining and recycling

## **WATER:**

- New technology for recycling of wastewater in paper and textile industry



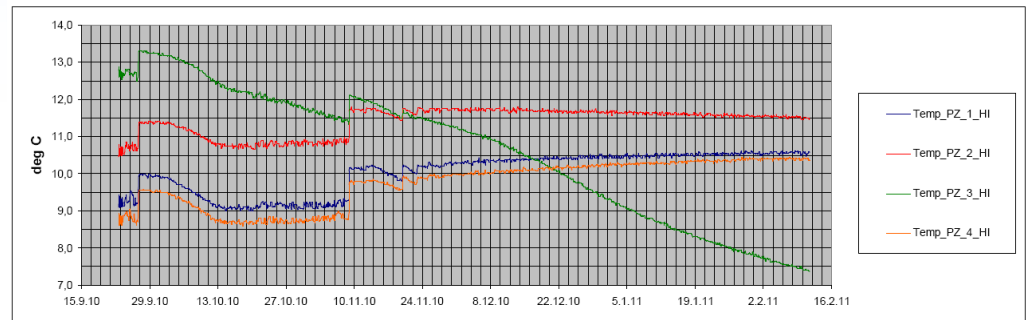
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# Measuring methods

## WATER CONSTRUCTIONS:

- New methods of measurement, for dam safety and evaluation



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# ***Waste treatment***

## **WATER RESERVOIRS:**

- New method of sediment removal from water reservoirs



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# Hydropower

## WATER TURBINES:

- Vortex turbines for low head applications



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# ***CORNET, AOP4Water – Water recycling in high water demanded industries***

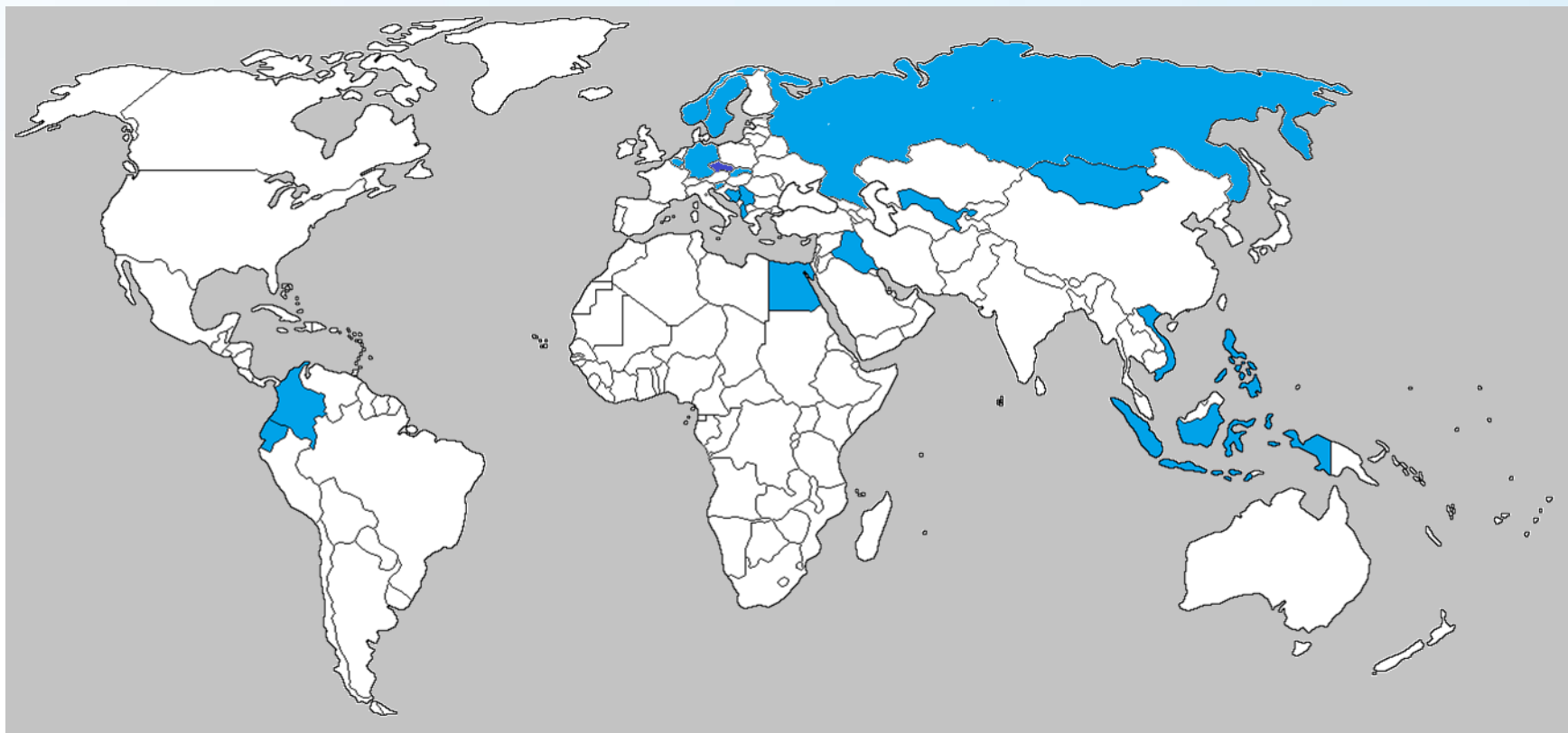


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# ***CREA Hydro&Energy in the World***



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# ***Territorial Working Groups***

## **IRAQ (Middle East):**

- Specialized on Iraqui Kurdistan
- Daughter company in Erbil

## **South East Asia:**

- Specialized on Philippines
- Representatives in Manila

## **Latin America:**

- Colombia, Ecuador, Peru, Chile



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## ***Natureef***

A new challenge for better natural resource

### **European Strategic Cluster Partnership in Sustainable Use of Natural Resources**

**– support to problem solutions through cluster cooperation**

- 9 clusters**
- 9 EU countries**
- Common interests:**
  - Natural resources solutions for Europe**
  - Development of cooperation outside Europe**



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**VEGETOLYS** – French cluster in plant production.



**FEMAC** – Spanish cluster in agriculture technologies.



**Agrocluster** – Portuguese agrotechnical and food industry cluster.



**Biomastec** – German biomass cluster.



**Green chemistry** – Polish cluster in ecological chemistry and biotechnologies.



**CREA Hydro&Energy** – Czech cluster in water management, environmental services and renewable energy.



**INNOSKART** – Hungarian ICT cluster.



**Green Synergy Cluster** – Bulgarian cluster in energy efficiency and renewable energy.



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# ***Natureef – Go International***

Project from COSME – Go International

## **Activities :**

- **International networks**
- **Trade fairs, presentation, seminars**
- **NATUREEF Ambassadors in LA, Philippines, China**
- **Missions of SMEs do cílových teritorií**

**Role of CREA :**

- **Leader of working package WP2**
- **Teritorial leader for South-East Asia**



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# ***Natureef clusters mission***

## **Philippines, November 2016**



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# *Examples of joint projects - Philippines*



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# Drinking Water Treatment Plant Baguio



Client: Baguio Water District

Realization: 2002 – 2004



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# Hydropower Plant San Luis

2 x 250 kW Francis



Client: Municipality San Luis,  
Realization: 2004 - 2006



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# ***Major Projects in Iraq***



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# Panel of Consultants for General Directorate of Dams

Client: Ministry of Agriculture and Water Resources, Erbil

Contract duration: 2010 – 2011

Number of Consultants: rotating experts – 3 at a time

Professions: Engineering Geologist

Hydraulic Engineer

Geotechnical Engineer

Civil Engineers – Dam Specialist

Concrete Spec.



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# Quatabian Dam

## Feasibility Study and Design of Dam and Hydropower Station



Client: Ministry of Agriculture and Water Resources

Project duration: 2008 – 2009



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# Monitoring System for Derbandikhan and Dokan Dams

Client: Ministry of Energy

Project duration: 2009 - 2011



Drilling for landslide monitoring



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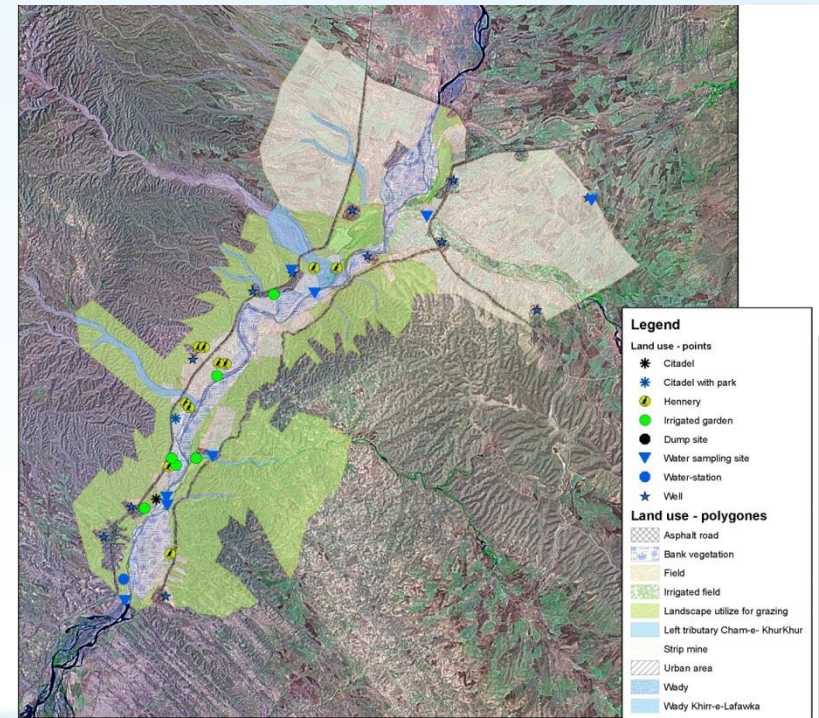
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# Study of Bawanur Dam, Hydropower Station and Irrigation Project

Client: High Committee for Relief of Garmian

Project duration: 2009 - 2011



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# Thank you for your attention



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