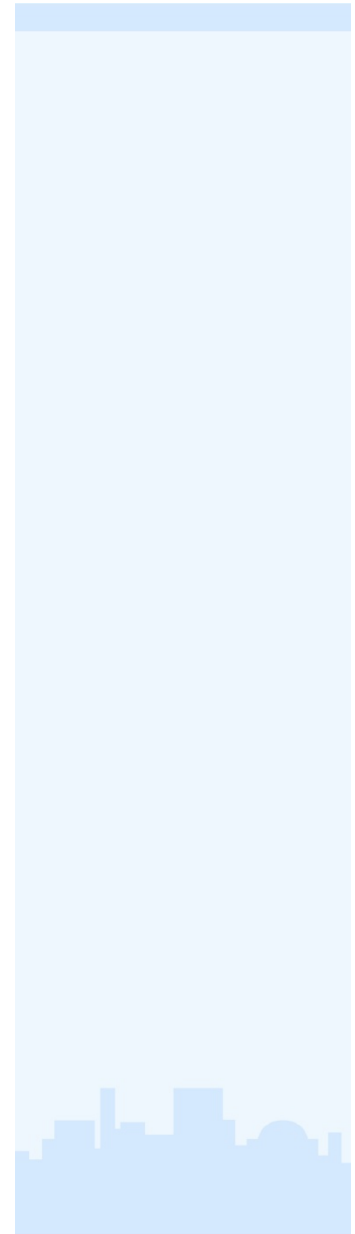


Report to GA

Nicosia, 26. Oct. 2013

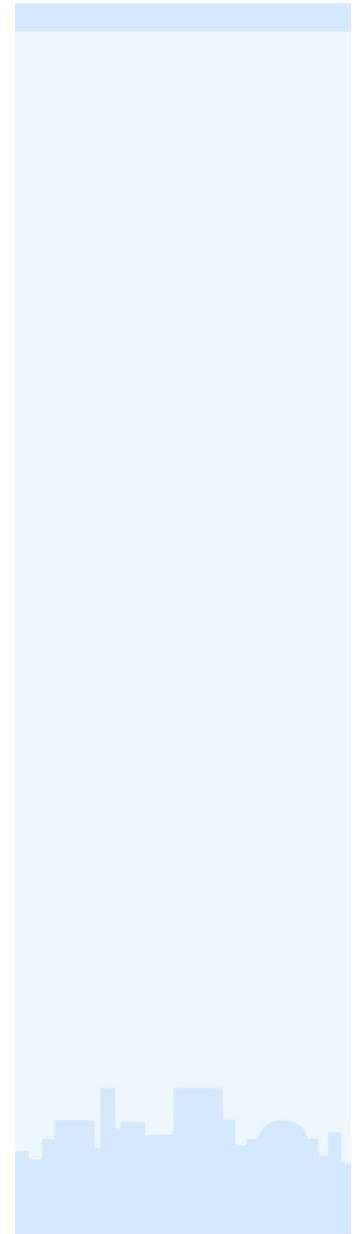
1. Presentation of and voting for the proposed agenda
2. International activity of chairman
3. Discussion “Water Management in Europe”
4. Working plan
5. Co-operation in water issues with WCCE and UN



Topic 1 Agenda

Accepted

9 participants



4.1 Engineer's Day of the Slovakian Chamber of Civil Engineers, Brno, October 2012

The green strategy towards sustainable energy supply in Germany - and the involvement of civil engineers -

Operation – Maintenance – Consulting



Foundations



Substations



Wind turbines



Sea cables

Topic 4.1 (cont. 1) High energy efficient buildings



Pict. 4: Unilever House



Pict. 5: Elbphilharmonie (both in Hamburg HafenCity)

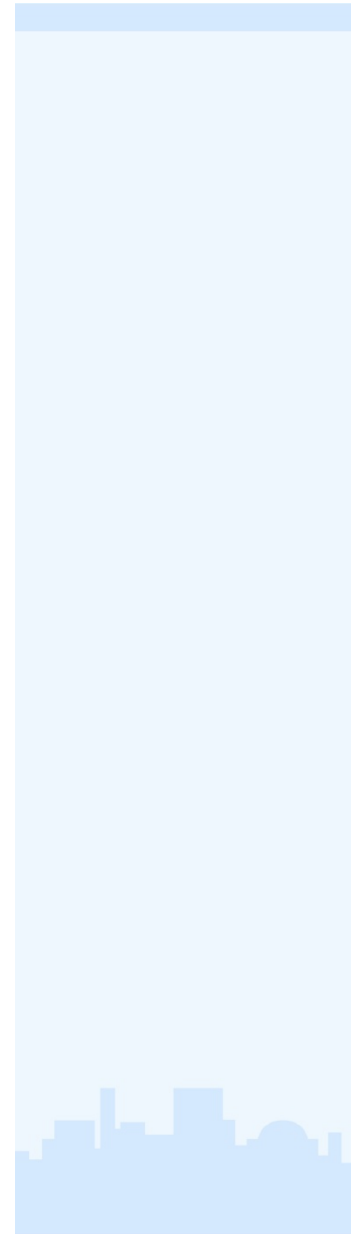


Topic 4.2

Conference “High Performance Buildings”

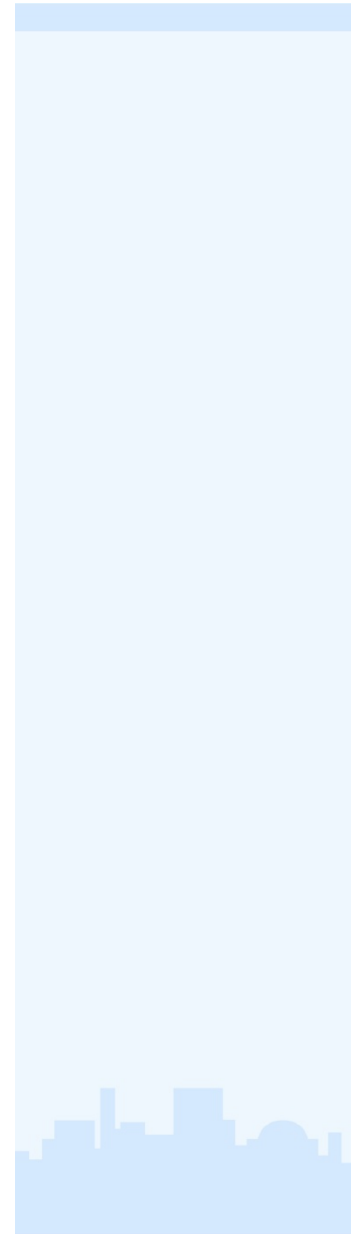
held in the premises of BBRI in Brussels, 24. – 26. June 2013

This very interesting conference was part of the EU Sustainable Energy Week in Brussels and consisted of four parts of half day duration each:



Topic 4.2 (cont. 1)

- Session 1
Performance Assessment Methodology, including cost analysis
- Session 2
ICT for Monitoring and Evaluation Methods for energy performance assessments, including intelligent metering environments and ICT
- Session 3
European Energy Standards related to the EPBD (TC 371)
- Session 4
High Performance Building Design: Solution sets, case studies, processes, open issues.



Topic 4.2 (cont. 2)

The conference has been organized by three powerful research organizations:

- EC Joint Research Center (www.jrc.ec.europa.eu)
- Italian National Agency for New Technologies, energy and sustainable Economic Development (ENEA) (www.enea.it)
- DYNASTEE network (which stands for **DYN**amic, **A**nalysis, **S**imulation and **T**esting applied to the **E**nergy and **E**nvironmental performance of buildings) (www.dynastee.info) together with INIVE (International Network for Information on Ventilation and Energy Performance) (www.inive.org)



Topic 4.2 (cont. 3)

Summarizing Overview

The **Energy Performance of Buildings Directive (EPBD) 2010/31/EU** was seen as the overruling topic. This directive was adopted by the EU Council and the European Parliament on 19 May 2010. It requires that from the year 2020 onwards all new buildings will have to be '**nearly-zero energy buildings**' (**nZEB**) and comply with high energy-performance standards and supply a significant share of their energy requirements from renewable sources.



Topic 4.3

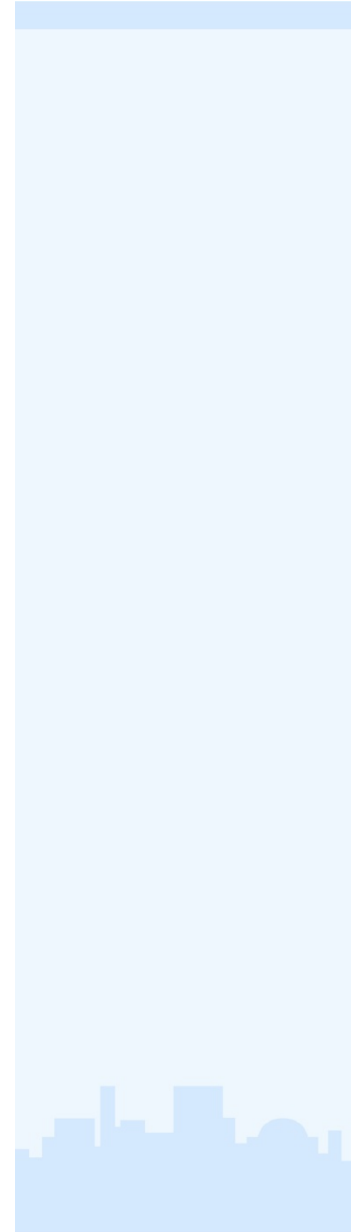
The International Conference on Engineering for Sustainable Energy in Developing Countries

Guangzhou, China, September 5 – 7, 2013

Towards a sustainable future

Photo Voltaic Energy - from world scale to its smart use at home

Carsten Ahrens
ZDI and Jade-Hochschule, Germany
ECCE, Athens, Greece
WCCE, Madrid, Spain
WFEO, SC Energy, Solar Group





International Conference on
Engineering for Sustainable Energy in Developing Countries

ESEDC 2013

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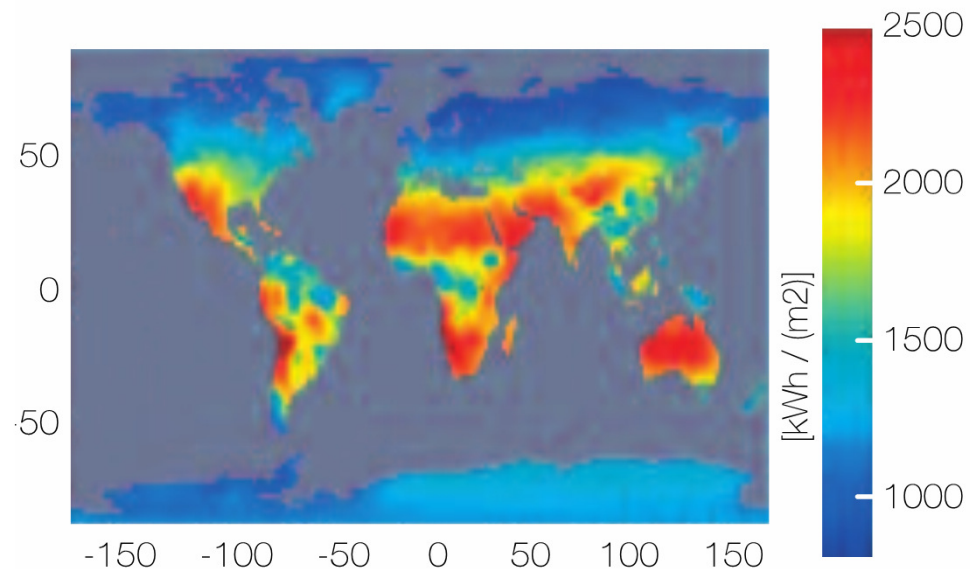
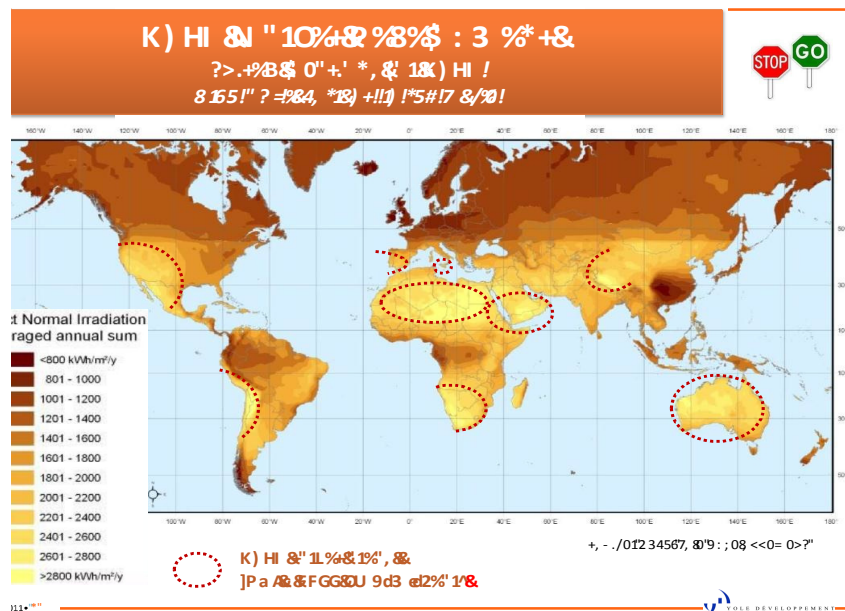
Jadehochschule, ZDI, Germany

ECCE, WCCE, WFEO (Solar Group)

Solar irradiation around the world

Total world primary energy demand by 4% land use of deserts

HIGH CONCENTRATED PV

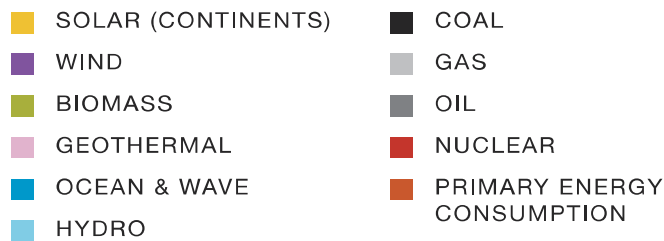
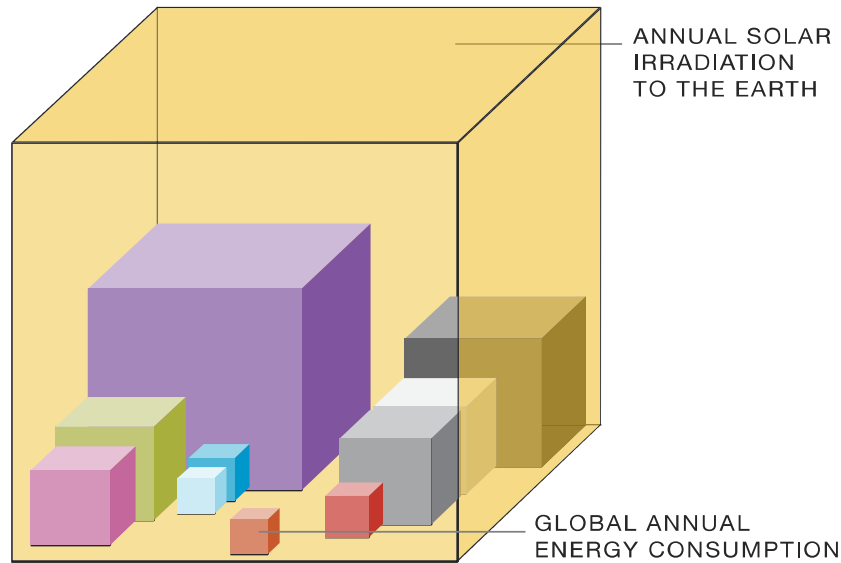


source: Gregor Czisch, ISET, Kassel, Germany.

„PLANE“ PV

Photo Voltaic Energy – from world scale to

Solar irradiation versus fossil energy



FOSSIL FUELS ARE EXPRESSED WITH REGARD TO THEIR TOTAL RESERVES WHILE RENEWABLE ENERGIES TO THEIR YEARLY POTENTIAL.

source: DLR, IEA WEO, EPIA's own calculations.

Sun ray's energy 10.000 x fossil energy

PV installations on 0.34% land in Europe could meet its total electricity consumption

Deserts are most suitable for solar use

- high irradiance
- low population
- small water use by PV installations
- but long transportation ways for electricity

World's interest in solar energy



The 5th Guangzhou International Solar Photovoltaic Exhibition 2013

China Guangzhou International Photovoltaic Industry Development and Investment Forum 2013

Date: August 19–21, 2013 Venue: China Import and Export Fair Pazhou Complex

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Topic 4.4

Proposal of the WFEO-brochure about

Solar Energy

Content

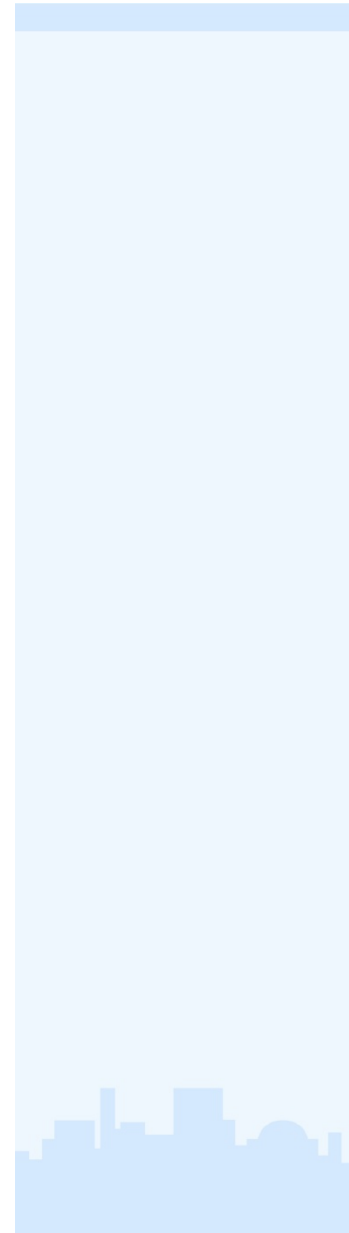
Forewords

WFEO-president

WFEO-chairman Energy Standing Committee

Solar Energy Task Group-chairman

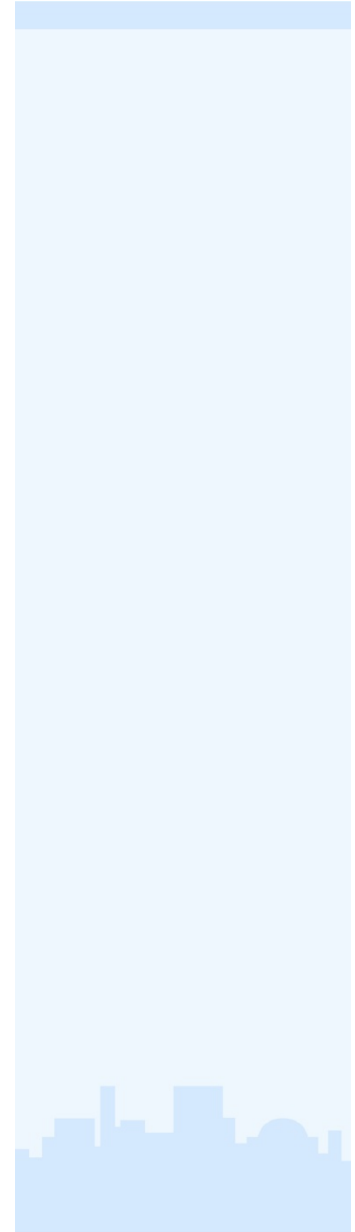
Author: Carsten Ahrens, chair of solar group



Topic 4.4 (cont. 1)

5. High Concentration Photo Voltaic (HCPV)

- Physical Basics
- Development of Photovoltaic Technology
- Production of Solar Cells and Modules
- Small Scale Use
- Industrial Electricity Production
- Grid Connection
- Island Solutions
- Development of production market
- Development of energy market (user)
- Advantages/disadvantages
- Outlook



Topic 4.4 (cont. 2)

5. High concentrated PV (HCPV)

High Concentration Photovoltaics (HCPV) Specific Aspects and Efficiencies

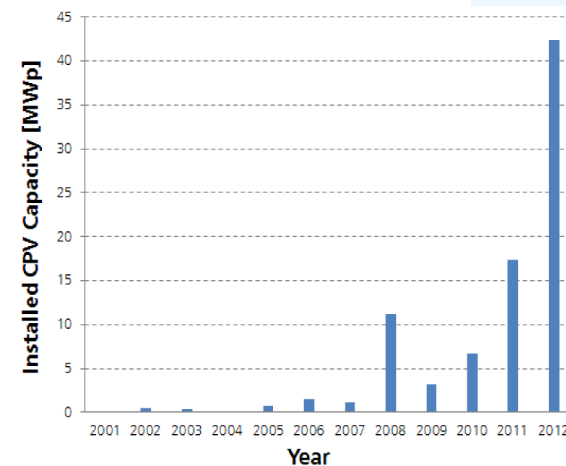
- HCPV is suitable for areas with high direct normal irradiance
- Concentrating optics are used to focus the light on small solar cells
- Concentration levels above 400 suns have become standard
- Various designs of HCPV systems are commercially available
- High efficiencies are achieved (see table)



Efficiencies	Lab Record	Commercial
Solar Cell	43.5 % (Solar Junction)	37-40%
Module	33.9% (Semprius)	25-31%
System (AC)	N.A.	23-27%

Source: Fraunhofer ISE, Progress in Photovoltaics, Semprius 2012

Yearly Installed Capacity of High Concentration Photovoltaic Systems (HCPV)*



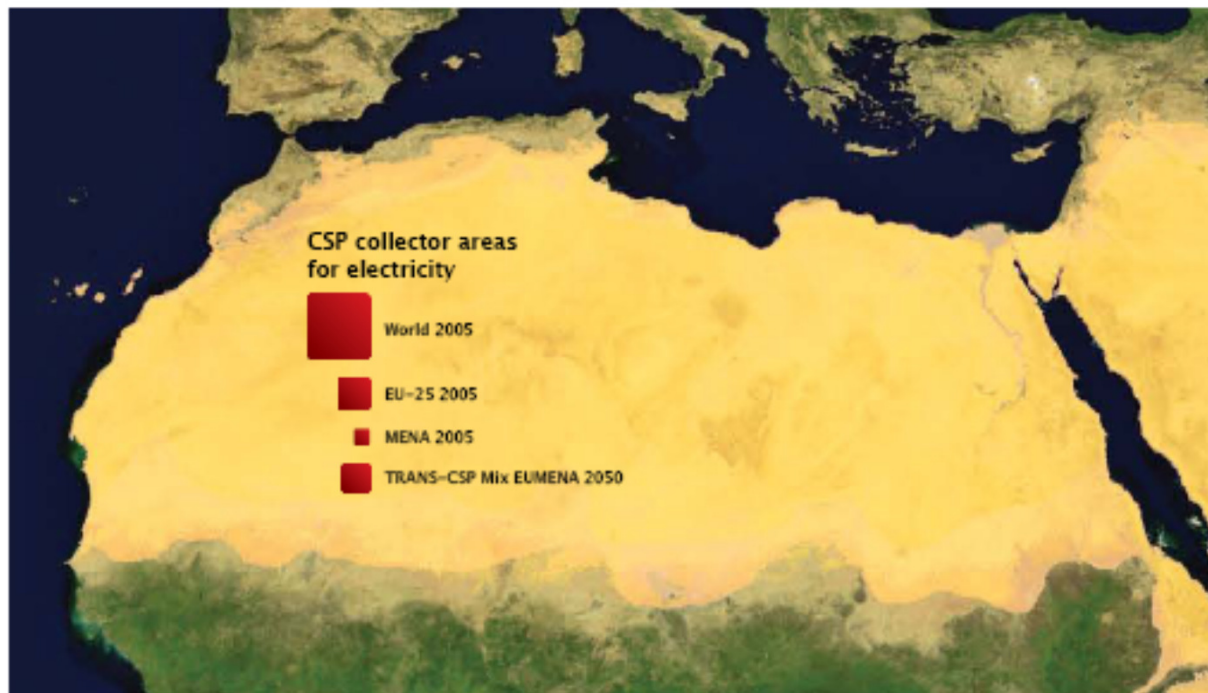
* HCPV has concentration factor from 300 up to 1000 suns

Data: ISE 2012 Graph: PSE AG 2012

Topic 4.4 (cont. 3)

Concentrated Solar Thermal Energy (CSP)

Desertec project in the EUMENA region

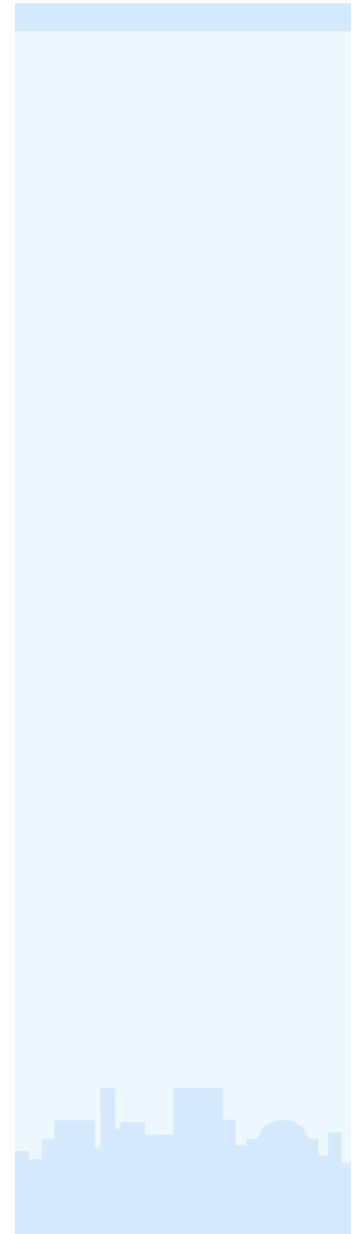


Topic 3. Water Management in Europe

Topic 4. Working plan

Questionnaire according to the conference

- Managing water resources
- Monitoring and assessment of surface and ground water
- Desalination
- Sewerage treatment
- Flood resilient technology
- Water loss management



Topic 4 (cont. 1)

- Participation in EU Water Projects

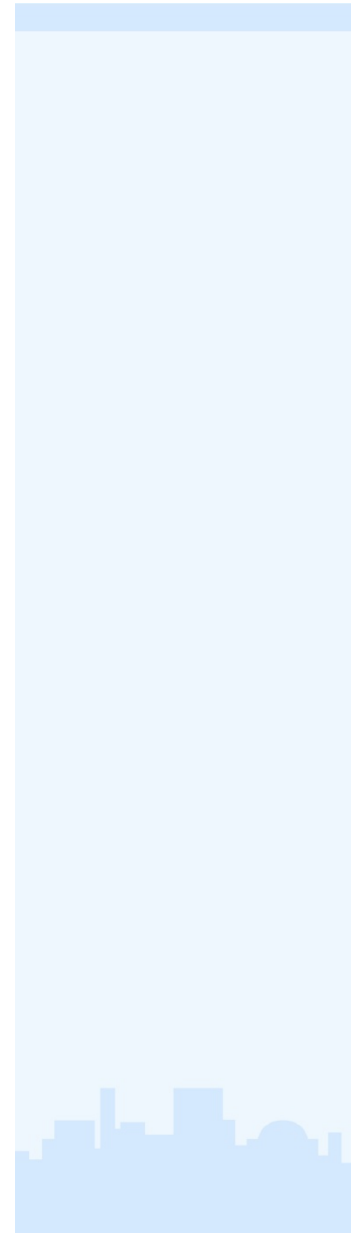
possibilities still have to be investigated

Topic 5

- Co-operation with WCCE

towards international wording and influence

has to be supported by ECCE GA



30 September 2013

Subject: World Council of Civil Engineers partnership application to UN-Water

Dear Mr. Sancho,

At its 19th Meeting (29-31 August 2013), UN-Water carefully evaluated your application according to the partnership criteria as listed in the UN-Water website <http://www.unwater.org/downloads/UNWaterPartnerCriteria.pdf>.

In my capacity as the Secretary of UN-Water, I am pleased to inform you that your application was successful, and your organization is confirmed as a UN-Water partner.



Topic 3 (cont. 3)

UN Water Members

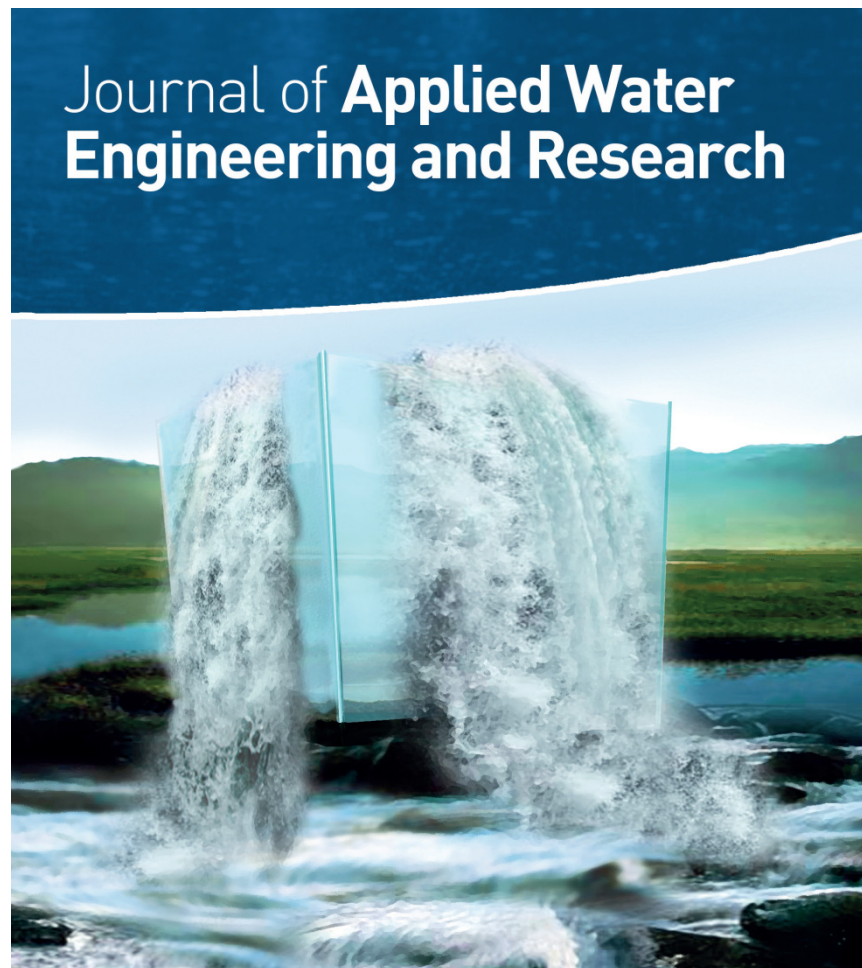


UNITAR
United Nations Institute
for Training and Research



UNWOMEN
United Nations
Entity for Gender
Equality and the
Empowerment of
Women

Topic 3 (cont. 4)



Thank you for your attention

