

Working Group on Energy Arbeitskreis Energie (AKE)

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The Energy Working Group (Arbeitskreis Energie) addresses in its twelve sessions topics which are of actual relevance with regard to climate change and the future supply and use of energy for society. A first overarching matter is Energy politics where perspectives for the German energy supply, in particular the government's energy concept, will be discussed but equally European perspectives. Also the evaluation of external costs of technological energy options will be considered.

Nuclear power is of high importance for Europe. Here the technologies of final waste repositories and the outlook for transmutation, in particular for the reduction of long-lived radioactive waste, will be addressed. – The perspectives of nuclear fusion will be discussed with regard to research and developments for ITER at the currently largest fusion device, the Joint European Torus (JET, Culham, UK), and to the upcoming Stellarator experiment Wendelstein VII-X (Greifswald).

Clean mobility is a major R&D topic. Both electromobility and fuel cells will be presented as well as the optimization of fuel production from renewables or natural gas. – The use of fossil energy will remain essential for electricity production and therefore technologies for CO₂ capture are important. Also the potential for geological CO₂ storage in Germany will be discussed.

For renewable energy systems a range of issues is discussed. Among them energy storage is of high importance. On the supply side developments in photovoltaics (in particular organic PV) are presented as are the major technological options for harnessing direct solar radiation in the sun-belt of the world. Furthermore, the large potential of geothermal energy will be addressed. – Heat pumps offer to reduce the primary energy requirements for heating. In this context also the market conditions for competition with co-generation of heat and electricity will be scrutinized.

The symposium SYCE, organized jointly with UP and SOE, is dedicated to the foundations and perspectives of climate engineering. A further joint session with UP addresses issues of off-shore wind energy which is expected to provide a large contribution for the future energy supply. – The AKE programme will start on Sunday, 13. March with a joint tutorial on future energy technologies organized by AGjDPG.

Overview of Invited Talks and Sessions

(lecture rooms: Monday: Mensa Dül, Tuesday: HSZ01, Wednesday: BEY 118)

Invited Talks

AKE 2.1	Mon	11:00–11:30	MENSA Dül	Das Energie-Konzept der Bundesregierung und andere Optionen für die Energiezukunft Deutschlands — ●MANFRED POPP
AKE 2.2	Mon	11:30–12:00	MENSA Dül	A strategy for competitive, sustainable and secure energy: Energy 2020 — ●STEPHAN KOLB
AKE 2.3	Mon	12:00–12:30	MENSA Dül	Vergleichende Bewertung von Stromerzeugungstechniken — ●RAINER FRIEDRICH
AKE 3.1	Mon	14:00–14:30	MENSA Dül	Endlagerung von hochradioaktiven Abfällen - internationaler Forschungsstand und Perspektiven — ●HORST GECKEIS, BERNHARD KIENZLER, KLAUS GOMPPER
AKE 3.2	Mon	14:30–15:00	MENSA Dül	ADS (Accelerator-Driven System) Kernreaktoren: Status und Perspektiven — ●ALEX C. MUELLER
AKE 4.1	Mon	15:00–15:30	MENSA Dül	Fusion research for ITER - what we can learn from JET — ●FRANCESCO ROMANELLI
AKE 4.2	Mon	15:30–16:00	MENSA Dül	Der Stellarator, ein alternatives Einschlusskonzept für ein Fusionskraftwerk — ●ROBERT WOLF
AKE 5.1	Mon	16:45–17:15	MENSA Dül	Energiespeicher für Elektromobilität Stand der Technik und Perspektiven — ●MARGRET WOHLFAHRT-MEHRENS

AKE 5.4	Mon	17:45–18:15	MENSA Dül	Production and conversion of liquid fuels and hydrogen from biomass and natural gas using micro-reactor technology — ●PETER PFEIFER
AKE 7.1	Wed	9:30–10:00	BEY 118	Routen und Wirkungsgrade der CO₂ Abscheidung in Kraftwerken — ●DETLEF STOLTEN
AKE 7.2	Wed	10:00–10:30	BEY 118	CO₂-Speicherkapazitäten in Deutschland: Eine aktuelle Betrachtung — ●JOHANNES PETER GERLING, STEFAN KNOFF, KLAUS REINHOLD, CHRISTIAN MÜLLER, FRANZ MAY
AKE 8.1	Wed	11:15–11:45	BEY 118	The Physics of Wind Park Optimization — ●STEFAN EMEIS
AKE 8.3	Wed	12:00–12:30	BEY 118	Offshore- Windparks; Ausgewählte Anforderungen aus dem Genehmigungsverfahren und der Praxis der Errichtung — ●CHRISTIAN DAHLKE
AKE 9.1	Wed	14:00–14:30	BEY 118	Geothermie für Grundlaststrom und Wärmeversorgung - internationale Nutzung, Potential und technologische Entwicklungen — ●DAVID BRUHN, ERNST HUENGES
AKE 10.1	Wed	14:30–15:00	BEY 118	Einsatz großer Wärmepumpen im Wohnungs- und Gewerbebau — ●RÜDIGER GRIMM
AKE 10.3	Wed	15:15–15:45	BEY 118	Anforderungen an einen Wärmepumpentarif zur Überwindung diskriminierender Steuern und Abgaben beim thermodynamisch optimierten Heizen — ●GERHARD LUTHER
AKE 11.1	Wed	16:30–17:00	BEY 118	Status and Potential of Organic Solar Cells — ●MORITZ RIEDE
AKE 12.1	Wed	17:30–18:00	BEY 118	Clean Power from Deserts - The DESERTEC Academic Initiative — ●MICHAEL DÜREN
AKE 12.3	Wed	18:15–18:45	BEY 118	Hochkonzentrierende Photovoltaik: Entwicklungsstand und Perspektiven — ●ANDREAS WALTER BETT
AKE 12.4	Wed	18:45–19:15	BEY 118	Aufwindkraftwerke: Funktionsweise, Prototyp, Zukunftsperspektiven — ●GERHARD WEINREBE

Sessions

AKE 1.1–1.4	Sun	16:00–18:30	HSZ 03	Tutorial - Future Energy Technologies (jointly with and organised by AGjDPG)
AKE 2.1–2.3	Mon	11:00–12:30	MENSA Dül	Energiepolitik und Technologiebewertung
AKE 3.1–3.2	Mon	14:00–15:00	MENSA Dül	Kernspaltung
AKE 4.1–4.3	Mon	15:00–16:15	MENSA Dül	Fusionsforschung
AKE 5.1–5.4	Mon	16:45–18:15	MENSA Dül	Mobilität
AKE 6.1–6.4	Tue	10:30–13:00	HSZ 01	Intersectional Symposium Foundations and Perspectives of Climate Engineering (jointly with UP and SOE)
AKE 7.1–7.4	Wed	9:30–11:00	BEY 118	CO₂ und Energiespeicherung
AKE 8.1–8.3	Wed	11:15–12:30	BEY 118	Offshore Wind
AKE 9.1–9.1	Wed	14:00–14:30	BEY 118	Geothermie
AKE 10.1–10.4	Wed	14:30–16:00	BEY 118	Wärmepumpen und Kraft-Wärme-Kopplung
AKE 11.1–11.3	Wed	16:30–17:30	BEY 118	Photovoltaik
AKE 12.1–12.4	Wed	17:30–19:15	BEY 118	Solarenergie im Sonnengürtel

Annual Meeting of the Working Group on Energy

The meeting will take place during the spring conference in Bad Honnef, 5-6 May, 2011.
For further details please refer to the programme of the spring conference.