

Programme - Plenary Sessions - Sunday

Opening Session:
Sunday, 11 October 2009
15h00 – 17h45

Eskom Plenary
Session Chair: Mr Jon Adams

Mr Jon Adams
Congress Chairman
Topic: Session proceedings, house arrangements.

Mr Kadri Nassiep
CEO: Saneri (a CEF Group Company)
Topic: Platinum Sponsor Address

Entertainment

Dr John Ledger
Chairman: Sustainable Energy Society of South Africa (SESSA)
Topic: Welcomes ISES to South Africa

Ms Monica Oliphant
ISES President
Topic: Welcome

Mr Kannan Lakmeeharan
Managing Director: System Operations and Planning Division, Eskom
Topic: Sponsor Address

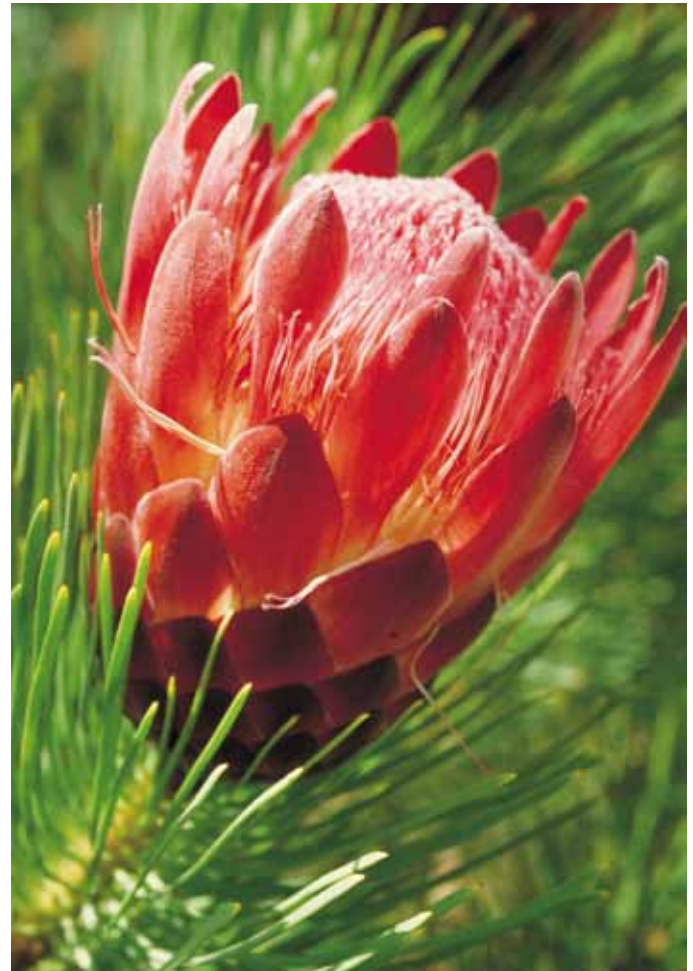
Prof. Dieter Holm
Programme Committee Chairman
Topic: Introduces Congress Programme

Min. Dipuo Peters
Minister of Energy
Topic: Opening Keynote Address

Dr Hermann Scheer
President: World Council for Renewable Energy (WCRE)
Topic: Renewable Energy Policy

Mr Richard Worthington
Manager: Climate Change Programme at World Wildlife Fund South Africa
Topic: Renewable Energy Policy and Ambition in South Africa

Ms H el ene Pelosse
Interim Director-General
International Renewable Energy Agency (IRENA)
Video Presentation



Oral Sessions - Monday 12 October 2009

Time	Venue	Abstract Title	Author / Presenter	Abstract Number
PLENARY SESSION - SESSION CHAIR: Ms Monica Oliphant / SESSION CO-CHAIR: Mr Jon Adams				
09h00	Eskom Plenary	CIS-Based Thin Film Technology: Transition from R&D to Commercial Production	Prof. Vivian Alberts	
09h30	Eskom Plenary	The Future of Solar Electricity	Prof. Eicke Weber	
10h00	Eskom Plenary	Eskom Strategic Investment	Mr Barry MacColl	
THEME 1 (RESOURCE ASSESSMENT), SESSION 1 - SESSION CHAIR: Dr David Renné / SESSION CO-CHAIR: Ms Monica Oliphant				
11h00	Eskom Plenary	Toward a Physically Based, High Resolution Surface Solar Irradiance Climatology from Geostationary Satellites	M. Sengupta, I. Laszlo, W. Straka, A. Heidinger, S. Miller and D. Renné	115
11h20	Eskom Plenary	Comparison of Solar Resource Assessments for South Africa	T.P. Fluri and T.W. von Backström	408
11h40	Eskom Plenary	Bayesian Model Selection of Solar Diffuse Fraction Models	P. Lauret , J. Boland and B. Ridley	81
12h00	Eskom Plenary	Fast Alternation of Solar Radiation	T. Tomson	6
12h20	Eskom Plenary	Applying Measured Reflection from the Ground to Simulations of Thermal Performance of Solar Collectors	J. Dragsted and S. Furbo	219
THEME 1 (RESOURCE ASSESSMENT), SESSION 2 - SESSION CHAIR: Prof. Christopher Cooper / SESSION CO-CHAIR: Mr Jason Schäffler				
14h00	Eskom Plenary	1) Empirical Correlations for Diffuse and Global Solar Radiation in Aljouf City, Saudi Arabia 2) Evaluation of Global Solar Radiation Models for Riyadh, Saudi Arabia	A.H. Maghrabi, Z. A. Al-Mostafa and S.M. Alshehri	313
14h20	Eskom Plenary	Statistical Comparisons of Clearance-Index-Based Diffuse Solar Radiation Correlations in Aljouf, Saudi Arabia	Z. A. Al-Mostafa, A.H. Maghrabi and S.M. Alshehri	314
14h40	Eskom Plenary	Effect of Photovoltaic Array Tilt-Angle on Seasonal Energy Generation for Lagos - Nigeria	M.A.C. Chendo and N.E. Erusiafe	382
15h00	Eskom Plenary	Spectral Solar Irradiance Estimation with Meteorological Parameters	J. Hashimoto, K. Saito, T. Kobayashi, J. Yoshino, T. Yasuda, A. Itagaki, T. Yamada and Y. Saito	123
15h20	Eskom Plenary	A Simple Model of the Monthly Global Solar Radiation In Madina, Saudi Arabia, Based on Four Meteorological Variables	A.H. Maghrabi, Z. A. Al-Mostafa and S.M. Alshehri	20
THEME 1 (RESOURCE ASSESSMENT), SESSION 3 - SESSION CHAIR: Mr Hon Peter Rae / SESSION CO-CHAIR: Dr David Renné				
16h30 - 18h10	Eskom Plenary	Panel Discussion: Symphony Of Renewables	Peter Rae (chairman), Stefan Gsänger, (WWEA), Ken Nystrom (WBA), Riichard Taylor (IHA), Monica Oliphant (ISES) and Godfrey. Bahati (IGA)	



Time	Venue	Abstract Title	Author / Presenter	Abstract Number
THEME 2 (SOLAR HEATING AND COOLING), SESSION 1 - SESSION CHAIR: Mr Ken Guthrie / SESSION CO-CHAIR: Mr Yaw Afrane-Okese				
11h00	Bill Gallagher Room	Investigation of Dynamic Effects in Evacuated Tubular Collectors	B. Perers, U. Pettersson and P. Kovacs	255
11h20	Bill Gallagher Room	Optically Selective Surfaces in Low Concentrating PV/T-Systems	J. Morfeldt	37
11h40	Bill Gallagher Room	Ten Year Study of a Novel ICPC Solar Collector Installation: Optical Modelling and Material Degradation	W. S. Duff and J. Daosukho	232
12h00	Bill Gallagher Room	Solar Transmittances for Glass Covers With and Without Anti Reflection Treatment Under Real Climatic Conditions	S. Furbo , Z. Chen, J. Fan and J. M. Schultz	332
12h20	Bill Gallagher Room	Internal Thermal Coupling In Direct-Flow Coaxial Vacuum-Tube Collectors	J. Glembin, H. Dieckmann, D. Eggert, G. Rockendorf, J. Scheuren	10
THEME 2 (SOLAR HEATING AND COOLING), SESSION 2 - SESSION CHAIR: Prof. Jan-Olof Dalenbäck / SESSION CO-CHAIR: Prof. Wasim Saman				
14h00	Bill Gallagher Room	Characterisation of a Novel Concentrating Parabolic Trough Solar Collector: A Comparison of International Models	S.A. Miller, S. Pearce and J. Dreyer	192
14h20	Bill Gallagher Room	Determination of a Focal Point of a Parabolic Reflector Using a Red Laser Diode	JSP Mlatho, M McPherson, RJJ Van Den Heetkamp and SH Taole	34
14h40	Bill Gallagher Room	Design of a Mareco Collector for High Solar Fraction	L.R. Bernardo, B. Perers and B. Karlsson	65
15h00	Bill Gallagher Room	CPC-Trough—Compound Parabolic Collector for Cost Efficient Low Temperature Applications	M.N. Baig and I.A. Khan	365
THEME 2 (SOLAR HEATING AND COOLING), SESSION 3 - SESSION CHAIR: Prof. Klaus Vajen / SESSION CO-CHAIR: Mr Eduardo Rincon				
16h30	Bill Gallagher Room	Hybrid Photovoltaic Thermal (PV/T) - Desiccant Integrated Infrared Drying Technique	C. Punlek, R. Pairintra, S. Chindaraksa, C. Lertsatitthanakorn and S.Maneewan	288
16h50	Bill Gallagher Room	Improving the Compatibility Between Steady State and Quasi Dynamic Testing for New Collector Designs	U. Pettersson, P. Kovács and B. Perers	256
17h10	Bill Gallagher Room	Misalignment Effects in a Point Focus Solar Concentrator	M. Mouzouris and M.J. Brooks	370
17h50	Bill Gallagher Room	Assessment and Optimization of the Performance of a Novel Solar Refrigeration System Applied in Agro-Food Industry	O. Ayadi, M. Aprile and M. Motta	275
18h10	Bill Gallagher Room	Solar Process Heat in Breweries - Potential and Barriers of a New Application Area	C. Lauterbach, B. Schmitt, K. Vajen, U. Jordan	336
THEME 3 (SOLAR ELECTRICITY), SESSION 1 - SESSION CHAIR: Prof. Wikus van Niekerk / SESSION CO-CHAIR: Prof. Dr Carsten Agert				
11h00	Ballroom 2	PV System Concepts And Energy Efficiency	H. Aust	82
11h20	Ballroom 2	Self-Assembled Solar Lighting Systems	T.J.Cumberbatch, D.Berger, M. Gazes, P.Momori, N.Ayikutu, C. Mtiamoah, F. Akorli,D. Anipa and F. Akuffo	268

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12h00	Ballroom 2	Effect of Non-Uniform Temperature Distribution in the Photovoltaic Array on Efficiency of Photovoltaic Systems	V. Benda, Z. Machacek, P. Wolf and K. Stanek	111
12h20	Ballroom 2	Analysis of Performance of Photovoltaic Modules Connected to the Electric Network After Twenty Years of Operation	J. Bione, P. Carvalho and R. Fellows	79
12h40	Ballroom 2	Web-Based Solar Photovoltaic Hybrid Design Tool for Rural Clinics in Africa	K. Burman, P. Lillenthal and D. Kline	114
THEME 3 (SOLAR ELECTRICITY), SESSION 2 - SESSION CHAIR: Prof. Eicke Weber / SESSION CO-CHAIR: Prof. Thomas Harms				
14h00	Ballroom 2	Concentrator Photovoltaic Systems with AC System Efficiencies >23% Field Proven	A. Gombert, I. Heile, J. Wüllner, T. Gerstmaier, A. Hakenjos, S. van Riesen, M. Klein, M. Röttger and V. Bellini	92
14h20	Ballroom 2	A Monthly Average Solar Irradiation Based Algorithm to Access the Life Cost Savings of Photovoltaic – Diesel Hybrid Power Plants for Isolated Grids	S. Colle, B. Felten and S.L. de Abreu	404
14h40	Ballroom 2	Performance and Prospects of a Lightweight Water-Borne PV Concentrator, Including Virtual Storage Via Hydroelectric-Dams.	P.M. Connor	391
15h00	Ballroom 2	Solar Hybrid Innovation Powers Marble Bar and Nullagine, the Two Hottest Towns in Western Australia	D. Edwards	99
15h20	Ballroom 2	Outdoor Test for Energy Consistency in Amorphous Silicon Photovoltaic Modules Using General Linear Modeling	M.A. Case and Y.A. Owusu	29
THEME 3 (SOLAR ELECTRICITY), SESSION 3 - SESSION CHAIR: Prof. Yogi Goswami / SESSION CO-CHAIR: Prof. Ernest van Dyk				
16h30	Ballroom 2	Decentralized Solar Lighting Can Enhance Health and Living Conditions of the Poor	S. von Wolff	254
16h50	Ballroom 2	Field Analysis of Commercial PV Inverters in the 5Kw Power Range with Respect to MPPT Effectively	V. Salas, P. J. Débora and E. Olías	120
17h10	Ballroom 2	Universalization of Electric Energy Through Energy Distributed by Photovoltaic Systems in Isolated Communities in Brazil	J. Bione, P. Carvalho and R. Fellows	80
17h30	Ballroom 2	Photovoltaic Devices Based on Photosynthetic Reactoin Center Protein	L. Frolov, M. Chichik, O. Wilner, L. Kravetsky, Y. Rosenwaks, C. Carmeli, S. Richter and I. Carmeli	35
THEME 4 (SOLAR BUILDINGS), SESSION 1 - SESSION CHAIR: Prof. Anne Grete Hestnes / SESSION CO-CHAIR: Prof. Dieter Holm				
11h00	Ballroom 3	Re-Shaping Our Built Environment for a RE Future	M. Halperin	27
11h20	Ballroom 3	Climate Zone Definition for Energy Efficient Solar Buildings in South Africa	F. Engelbrecht, D. Holm and I. Meiklejohn	181
11h40	Ballroom 3	Study to Enhance Comfort Status in Naturally Ventilated Vernacular Buildings of Northeast India	M.K. Singh, S. Mahapatra and S.K. Atreya	230
12h00	Ballroom 3	Thermal Comfort in Outdoor Spaces. Impact of Different Urban Design Strategies for Arid Regions.	E. Correa, M. Angélica Ruiz, A. Cantón and G. Lesino	286



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12h20	Ballroom 3	Cost-Effective Low Energy Solutions – A Demonstration Project in Denmark - Results from the Class 1 EU Concerto Project	O.C. Mørck and K.E. Thomsen	108
12h40	Ballroom 3	The Impact of Passive Design and Solar Energy Use in a Housing Development on the Electrical Grid	W. Saman, E. Halawa	287
THEME 4 (SOLAR BUILDINGS), SESSION 2 - SESSION CHAIR: Prof. Dr Agert Carsten / SESSION CO-CHAIR: Ir André Gillet				
14h00	Ballroom 3	Assessment of Daylight Qualities in Sustainable Buildings	L.O. Beltrán and F. Farias	303
14h20	Ballroom 3	Light-Scattering Properties of a Venetian Blind Slat Used for Daylighting Applications	A.M. Nilsson, J.C. Jonsson and A. Roos	302
14h40	Ballroom 3	Daylighting Design in Sustainable Solar Architecture	F.M.T Fard, A.R. Dizaji, Y. Douzdouzani and A. A'zami	419
15h00	Ballroom 3	A Simplified Method for Evaluating the Daylighting Performance of Venetian Blinds	C. Tian and T.Y. Chen	182
15h20	Ballroom 3	Effect of Difference Glass Types of Pyramidal Skylight on Indoor Conditions	C. Lertsatitthanakorn and M. Ongwandee	279
15h40	Ballroom 3	Monitoring and Simulation of a Building for Agamic Propagation Plant Production	V. García, A. Iriarte, S. Flores and G. Lesino	93
THEME 4 (SOLAR BUILDINGS), SESSION 3 - SESSION CHAIR: Mr Wim Jonker Klunne / SESSION CO-CHAIR: Mr Werner Weiss				
16h30	Ballroom 3	Comparison of Sustainable Energy Technologies and Their Application to Low Energy Building	A. Girard	30
16h50	Ballroom 3	Collaborative Integral Design of Active Roofs	W.Zeile, E.M.C.J. Quanjel and W. A. Borsboom	69
17h10	Ballroom 3	Case Study on Residential Buildings Design Process Integrated Wall-Mounted Solar Air Collector in Cold Area in China	B. Chen, J. Zhu, M. Liu and W.Yao	270
17h30	Ballroom 3	Heat Self-Driving Pump Uses in the Solar Architecture and Building Integration	H. Lin	14
17h50	Ballroom 3	Reduction of Greenhouse Emissions from the University of South Australia-Learning to Educate With Less	S.O. Martin, A. Lewis, F. Bruno, W. Saman, A. Marshall and T. Jones	96
18h10	Ballroom 3	A Preliminary Study on Energy-Saving Strategies of Rural House in North China	L. Yu, L. Jing, L. Jinghua, H. Xiaojuan, X. Jiaoli and Z. Yifei	51
THEME 5 (SOLAR ENERGY AND SOCIETY), SESSION 1 - SESSION CHAIR: Ms Hillary Erasmus / SESSION CO-CHAIR: Prof. John Boland				
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11h20	Ballroom 4	The Ewe Research Center Next Energy: An Approach for Utility Driven Research Into Renewable Energies	C. Agert	63
11h40	Ballroom 4	Strategies and Policies to Encourage Australian Residential Investment in Solar Energy	A. Allan	135

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12h20	Ballroom 4	Adelaide Solar City: Innovative Solutions to Engage Consumers and Facilitate Behavioural Change	D. de Bortoli	52
THEME 5 (SOLAR ENERGY AND SOCIETY), SESSION 2 - SESSION CHAIR: Ms Monica Oliphant / SESSION CO-CHAIR: Dr Rubin Patterson				
14h00	Ballroom 4	"Integration" – A Buzz-Word for Changing Energy Structures and Key to Efficient Technology Implementation	L. Eltrop	229
14h20	Ballroom 4	Role of Solar Water Heaters in Gauteng Province, South Africa	E.D. Özdemir, S. D. Marathe, J. Tomaschek and L. Eltrop	227
14h40	Ballroom 4	Energy Modeling to Substitute Renewable Energy Sources in the Commercial Energy Scene	S. Loganathan, I. Selvarasan, A.S. Arthur and R. Goic	388
15h00	Ballroom 4	Mainstreaming Solar Hot Water in the Australian Market	K. Guthrie and S. Ott	234
15h20	Ballroom 4	Socio-Economic Impacts and Regulatory Framework Requirements for a Solar PV Feed-In Tariff in South Africa	L. Makhele and J. Curren	355
THEME 5 (SOLAR ENERGY AND SOCIETY), SESSION 3 - SESSION CHAIR: Mr Ken Guthrie / SESSION CO-CHAIR: Dr Elimar Frank				
16h30	Ballroom 4	Strategies to Regulate the Renewable Energy Industry in Namibia	K. Ndhlukula	212
16h50	Ballroom 4	Long Term Performance of Amorphous Silicon Grid Connected Photovoltaic System	S. M. Pietruszko, B. Fetlinski, M. Bialecki	282
17h10	Ballroom 4	Solar Energy in Burkina Faso: Potential and Barriers	W. Ramde, A. Bagre, Y. Azoumah	262
17h30	Ballroom 4	Energy Saving Potential and Economical Analysis of Solar Systems in the Urban Quarter Scharnhäuser Park	A. Tereci, D. Schneider, D. Kesten, A. Strzalka and U. Eicker	91
17h50	Ballroom 4	Improving the Future Success and Sustainability of Bangladesh's SHS Program	T. Urmee and D. Harries	315
18h10	Ballroom 4	Solar City Malmö - The Solar Energy Centre of Sweden	A. Cornander	110
FARRINGTON DANIELS LECTURE				
18h30	Bill Gallagher Room	Farrington Daniels Lecture	Prof. Yogi Goswami	



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PLENARY SESSION - SESSION CHAIR: Mr Torben Esbensen/ SESSION CO-CHAIR: Mr Richard Worthington				
09h00	Eskom Plenary	Structure and Dynamic of 100% Renewable Energy Supply	Dr Harry Lehmann	
09h30	Eskom Plenary	How Solar Cities Can Help us Reach our Climate Change	Ms Monica Oliphant	
10h00	Eskom Plenary	The Sacred Cow	Mr Alexandros Tombazis	
THEME 1 (RESOURCE ASSESSMENT), SESSION 4 - SESSION CHAIR: Prof. Christopher Cooper / SESSION CO-CHAIR: Mr Torben Esbensen				
11h00	Eskom Plenary	Modelling the Conditional Variance of Wind Farm Output Utilising Realised Volatility	J. Boland, B. Ridley and M. Agrawal	66
11h40	Eskom Plenary	Solar, Hydro and Wind Electricity Generation Potential of the Free State Province, South Africa	AJ Meyer, TP Fluri, D Palmer	346
12h00	Eskom Plenary	Biomass Potential of Sub-Sahara Africa and Next Generation Technologies to Maximize Bioenergy Usage	W.H. van Zyl, J.F. Görgens, J.H. Knoetze, H. von Blottnitz and M. Bloom	294
12h20	Eskom Plenary	Methodology of Analysis of Biomass Potential Using GIS	K. Havlíčková, J. Weger, J. Suchý and J. Šedivá	54
12h40	Eskom Plenary	Rational Use of Renewable Energy on Earth	K. Jian	45
THEME 1 (RESOURCE ASSESSMENT), SESSION 5 - SESSION CHAIR: Mr Yaw Afrane-Okese / SESSION CO-CHAIR: Ms Mahalath Halperin				
14h00	Eskom Plenary	Temporal and Spatial Availability of Solar Energy Resources in Zimbabwe.	A. Chikukwa and J. Lovseth	250
14h20	Eskom Plenary	The State of Energy Resource Assessment in Chile	A. Ortega, R. Escobar, H. Vidal, S. Colle, S. L. Abreu	112
15h00	Eskom Plenary	Solar Energy Potentials in Gobi Desert by Remote Sensing Approach	M. Ito and K. Kurokawa	240
15h20	Eskom Plenary	Empirical Correlations of Global Irradiation and Weather Data at Kumasi	E.W. Ramde, K. Darkwah, Y. Azoumah; A. Bagre	263
15h40	Eskom Plenary	Evaluation of Projected Beam Irradiation for Selected Zambian Sites	S. Hatwaambo, B. Perers and B. Karlsson	196
THEME 2 (SOLAR HEATING AND COOLING), SESSION 4 - SESSION CHAIR: Prof. Simon Furbo / SESSION CO-CHAIR: Dr John Ledger				
11h00	Bill Gallagher Room	Collector Parameter Identification Methods and Their Uncertainties	C. Budig, J. Orozaliev, A.C. de Keizer, O. Kusyy and K. Vajen	378
11h20	Bill Gallagher Room	Efficiency and Lifetime of Solar Collectors for Solar Heating Plants	J. Fan, Z. Chen, S. Furbo, B. Perers, B. Karlsson	16
11h40	Bill Gallagher Room	Thermal Stratification in a Hot Water Tank Established by Heat Loss of the Tank	J. Fan and S. Furbo	260
12h00	Bill Gallagher Room	Solar/Electric Heating System for the Future Energy System	B. Perers, S. Furbo, E. Anderssen and J. Fan	257
12h20	Bill Gallagher Room	Development of a Modular and Compact Charge and Discharge Unit for Large-Scale Solar Thermal Systems	K. Zass, C. Wilhelms, K. Vajen, U. Jordan and W. Kramer	208
12h40	Bill Gallagher Room	Innovative Example for Central Solar Heating Plant with Seasonal Thermal Energy Storage in Germany	R. Marx, F. Ochs, W. Heidemann, H. Müller-Steinhagen	83

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THEME 2 (SOLAR HEATING AND COOLING), SESSION 5 - SESSION CHAIR: Mr Peet du Plooy / SESSION CO-CHAIR: Dr Harald Drucek				
14h00	Bill Gallagher Room	Low Temperature Chemical Heat Storage - New Technologies and Developments	H. Kerskes, B. Mette, F. Bertsch, H. Drück, H. Müller-Steinhagen	159
14h20	Bill Gallagher Room	Effect of Convection Using Two PCMs on the Thermal Performance of BIPV Systems	M.J. Huang and N. Hewitt	127
14h40	Bill Gallagher Room	Experimental Investigation of PCMs for the Hot Side of a Vapour Compression Heat Pump to Adjust Tariff Rates	F. Agyenim and N. Hewitt	214
15h00	Bill Gallagher Room	Sorption Storages for Solar Thermal Energy – Possibilities and Limits	A. Hauer	57
15h20	Bill Gallagher Room	Guaranteed Solar Results for Commercial Solar Hot Water Systems	D.Tudor Jones and H. Reiche	311
15h40	Bill Gallagher Room	Solar Water Heater Employing Heat Pipe	M. Bahray	216
THEME 2 (SOLAR HEATING AND COOLING), SESSION 6 - SESSION CHAIR: Mr Werner Weiss				
16h30 - 18h10	Bill Gallagher Room	Panel discussion: Overcoming the Challenges to Wide-Spread SWH Implementation	Panelists: Werner Weiss, Harald Drucek, Dylan Tudor Jones and John Ledger	
THEME 2 (SOLAR HEATING AND COOLING), SESSION 8 - SESSION CHAIR: Mr Peter Kovacs / SESSION CO-CHAIR: Dr Thembakazi Mali				
16h30	Eskom Plenary	Cost Assessment of an Optimized Solar Assisted Water Ejector Cooling Cycle with a Booster Using CO ₂ as Working Fluid	S. Colle, J. Cardemil, H. Vidal and R.Escobar	402
16h50	Eskom Plenary	Novel Concept for a Solar Cooler/Heater based on Adsorption Cycle for Domestic Application	L. Crema, A. Bozzoli, G. Cicolini and A. Zanetti	335
17h10	Eskom Plenary	Evaluation of a Solar Adsorption Cooling Device 2009	K.J. Nwamba, C.F. Meyer and M. Mbarawa	191
17h30	Eskom Plenary	Freshwater and Cooling Cogeneration by Solar Energy	G. Franchini and A. Perdichizzi	376
17h50	Eskom Plenary	Introduction for Demonstration Projects of Solar Heating and Cooling in China	Z. Ruicheng, H. Tao, Z. Xinyu, H. Zhulian and D. Yu	19
18h10	Eskom Plenary	Solar Heating and Cooling for the Solar City Gleisdorf	A.Thuer and M.Vukits	100
THEME 3 (SOLAR ELECTRICITY), SESSION 4 - SESSION CHAIR: Mr Francis de Winter / SESSION CO-CHAIR: Mr Thomas Roos				
11h00	Ballroom 2	Parameter Extraction from I-V Characteristics of PV Devices	E.Q.B. Macabebe, C.J. Sheppard and E. E. van Dyk	85
11h20	Ballroom 2	A Self-Powered Hybrid Photovoltaic and Solar Thermal Cell	A. Nurick and C. J. Sheppard	242
11h40	Ballroom 2	Coupling Analysis of PV Powered Fan Systems for Low Power without Batteries	V. Salas, P. J. Débora and E. Olías	119
12h00	Ballroom 2	Non-Destructive Test Method for Determining Encapsulation Cure Levels	L. Strzegowski	5
12h20	Ballroom 2	Thermal Energy Storage in a Rock Bed	K.G. Allen, D.G. Kröger and T.P. Fluri	369
12h40	Ballroom 2	Preliminary Study of a 1200 House Off-Grid Development Powered from Biomass	D. Palmer and A.J. Meyer	357



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THEME 3 (SOLAR ELECTRICITY), SESSION 5 - SESSION CHAIR: Dr Werner Platzer / SESSION CO-CHAIR: Mr Barry MacColl				
14h00	Ballroom 2	Solar Thermal Power Plant Model to Determine Fossil Fuel Backup Consumption for Different Locations in Northern Chile	T.J. Larraín and R.A. Escobar	77
14h20	Ballroom 2	Potential Assessment for Concentrating Solar Power in South Africa	T.P. Fluri	409
14h40	Ballroom 2	Techno-Economic Modelling of Solar Power Systems 2009	T.H. Huang and D.M. Joseph	319
15h00	Ballroom 2	Numerical Simulation of Glass-to-Metal Sealing Stress in Solar Receiver Tube	D.Q. Lei, Z.F. Wang and J. Li	17
15h20	Ballroom 2	Thermal Stress and Fatigue Life Analysis on Molten Salt Central Receiver	X. Li, F. Bai, X. Song, C. Chang and Z. Wang	233
15h40	Ballroom 2	Small Scale Solar ORC System for Distributed Power in Lesotho.	M. Orosz	94
THEME 3 (SOLAR ELECTRICITY), SESSION 6 - SESSION CHAIR: Dr Andreas Gombert / SESSION CO-CHAIR: Prof. Boaventura Cuamba				
16h30	Ballroom 2	Linear Fresnel Collectors as an Emerging Option for Concentrating Solar Thermal Power	W.J. Platzer	353
16h50	Ballroom 2	Regulating Solar Chimney Power Plant Output According to Demand	J.P. Pretorius and D.G. Kröger	98
17h10	Ballroom 2	Assessment of Parabolic Trough Solar Power Plant in Typical Chinese Northern Region	H. Qu, J. Zhao	53
17h30	Ballroom 2	A Review of Potential Bulk Solar Power Generation Options for the Upington Area of South Africa	J.C. Tempies M.J. Brooks and N.M. Ijumba	118
17h50	Ballroom 2	Stall Considerations in Solar Chimney Turbines	T.W. von Backström and S.M. Maliage	380
THEME 3 (SOLAR ELECTRICITY), SESSION 8 - SESSION CO-CHAIR: Mr Stefan Gsänger				
14h00	Ballroom 3	Design of a Multi-Purpose Target-Aligned Heliostat Field	T. H. Roos, R. Buck and A. Pfahl	272
14h40	Ballroom 3	High Productivity Wind Turbines	J.H. Jooste	327
15h00	Ballroom 3	Performance Characteristics of Airfoil-Blade Micro Wind Turbines	M.K.H. Leung and H.K. Lee	401
15h20	Ballroom 3	Analysis of an Offshore Wind Farm in India for Sustainable Energy	I. Selvarasan, J. Herbert, S. Loganathan and A.S. Arthur	97
15h40	Ballroom 3	Laminar Separation Bubble Prediction with CFD	W.T. Pierce and T.W. von Backström	381
THEME 3 (SOLAR ELECTRICITY), SESSION 9 - SESSION CHAIR: Prof. Klaus Vajen / SESSION CO-CHAIR: Mr Eduardo Rincon				
16h30	Ballroom 3	Hybrid Backup Solutions for Unstable Grids	M. Wollny and S. Tapanlis	36
16h50	Ballroom 3	Small Hydropower for Rural Electrification in South Africa - Using Experiences from Other African Countries	W.E. Jonker Klunne	128
17h10	Ballroom 3	The Use of Kites to Provide Maritime Wind Propulsion	F. de Winter and D. Culp	337
17h30	Ballroom 3	Ageing of Grid Connected Li-Ion Traction Batteries Used for Storage of Fluctuating Renewable Energy	B. Lenz, M. Meyer and C. Agert	226
17h50	Ballroom 3	Distributed Generation Systems for South Africa Based on Renewable Energy Resources	S. Szewczuk	156

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THEME 4 (SOLAR BUILDINGS), SESSION 3 - SESSION CHAIR: Prof. Ernest van Dyk / SESSION CO-CHAIR: Dr Graciela Lesino				
11h00	Ballroom 3	Study on Building-Integrated Photovoltaic Technologies and Applications in Hong Kong	S. Liangliang, L. Chengzhi, A. Dawei and Y. Hongxing	316
11h20	Ballroom 3	Workshops in Dutch Sustainable Building Design Practice	W. Zeile, E.M.C.J. Quanjel and W. A. Borsboom	68
11h40	Ballroom 3	Summer Cooling a New Energy Need in High Latitude Countries	D.A. Chwieduk	342
12h00	Ballroom 3	Development of Advanced Model for Concentrating Photovoltaic (CPV) System	A. Zahedi	312
12h20	Ballroom 3	The Basics of Crystalline Silicone Based Photo-Voltaic Module Production	R. Lange and C. Gisep	343
12h40	Ballroom 3	Investigation of ITO Physical Properties With and Without ZnO Buffer Layer on Different Substrates	S. Bagherzadeh, N. Manavizadeh and E. Asl-Soleimani	24
THEME 5 (SOLAR ENERGY AND SOCIETY), SESSION 4 - SESSION CHAIR: Mr Werner Weiss / SESSION CO-CHAIR: Mr Henning Holm				
11h00	Ballroom 4	European Standards for Thermal Solar Systems and Solar Keymark Certification	J.E. Nielsen, H. Drück and H. Müller-Steinhagen	289
11h20	Ballroom 4	International Standards for Solar Water Heaters	K. Guthrie and M. Maffucci	235
11h40	Ballroom 4	Drivers of Solar Energy Implementation in Developing Countries: A Cost-Benefit Perspective Versus Environmental Perspective	S. Chikumba and K. Sithole	354
12h00	Ballroom 4	Analysis of the Learning Curve of Photovoltaic Technology and the Underlying Significant Factors	J. Bione, N. Fraidenraich and O. C. Vilela	58
12h20	Ballroom 4	The Role of Research, Education and Training in Promoting the Deployment of Renewable Energy in Mozambique	B. Cuamba, M. Chenene, M. Chissico, J. Lovseth, O. Nydal and B. Karlsson	151
12h40	Ballroom 4	Sustainable Cities: Density versus Solar Access? A study of Digital Design Tools in Architectural Design	P.A. Sattrup	155
THEME 5 (SOLAR ENERGY AND SOCIETY), SESSION 5 - SESSION CHAIR: Prof. István Farkas / SESSION CO-CHAIR: Mr Jason Schäffler				
14h00	Ballroom 4	Renewable Energy Education Project (REEP)- A Knowledge Network for Market Driven Training	C. Idan, D. Anipa, A. Brew-Hammond, G. Takyi, E. Ramde	415
14h20	Ballroom 4	Solarcampus – Project-Based Student Courses Turn a University Towards Renewables and Energy Efficiency	K. Vajen, P. Emmerich, C. Rose, A. Maas and S. Schlitzberger	356
14h40	Ballroom 4	Potential of Hybrid PV Systems for Rural South Africa – Addressing Income Activities and Water Supply -	B. Ortiz, S. Szweczuk, M. Vetter, J. Went	368
15h00	Ballroom 4	The International Business Alliance for Renewable Energy in Developing Countries	M. Wollny and G. Glania	101
15h20 - 16h00	Ballroom 4	Video presentation: Reinventing Fire	A. Lovins	



Time	Venue	Abstract Title	Author / Presenter	Abstract Number
THEME 5 (SOLAR ENERGY AND SOCIETY), SESSION 6 - SESSION CO-CHAIR: Mr Kudakwashe Ndhlukula				
16h30	Ballroom 4	Appropriate Energy Technology and Development	J.M. Green	293
16h50	Ballroom 4	Methodological Proposal for Solar Technology Transfer. Case-Study in the Argentina Northwest	S. Bistoni, A. Iriarte, A. Pereyra, M. Kiskía, G. Lesino, V. Javi and C. Rodriguez	95
17h10	Ballroom 4	On-Line Use Meters for Monitoring Zero Energy Cooking Devices	M. Grupp, M. Balmer, H. Bergler, D. Hancock and G. Schröder	165
17h30	Ballroom 4	Renewable Technology for Energy Access and Poverty Alleviation in Sahelian Countries: Evidence from Senegal	D.O. Racine	33
17h50	Ballroom 4	Renewable Energy and Research within Eskom	T. Govender	308

Oral Sessions - Wednesday 14 October 2009

Time	Venue	Abstract Title	Author / Presenter	Abstract Number
PLENARY SESSION - SESSION CHAIR: Ms Mahalath Halperin/ SESSION CO-CHAIR: Dr Thembakazi Mali				
09h00	Eskom Plenary	Energy and Climate	Prof Hartmut Grassl	
09h30	Eskom Plenary	The Recent Hubbert Peak of World Oil Production, its Likely Impacts on Population, Lifestyles, Conflicts, Globalization, and the Environment; and the Challenge and Opportunity it Offers ISES	Francis de Winter	338
10h00	Eskom Plenary	Measuring, Managing and Alternatives to The Age of Scarcity	Peet du Plooy	422
THEME 2 (SOLAR HEATING AND COOLING), SESSION 7 - SESSION CHAIR: Prof. Alexander Thür / SESSION CO-CHAIR: Mr Jim Hickey				
11h00	Bill Gallagher Room	Experimental Evaluation of a Novel Heat Exchanger for Solar Water Heating Systems	J.D. Mondol, M. Smyth, A. Zacharopoulos and V. O'Brien	189
11h20	Bill Gallagher Room	Analysis of Incentives Using an Energy System Model for Solar Water Heater Installation in Gauteng Megacity Region, South Africa	J. Tomaschek, A. Dobbins, E. Doruk Özdemir, U. Fahl	406
11h40	Bill Gallagher Room	Holistic System Testing – 10 Years of Concise Cycle Testing	R. Haberl and E. Frank, P. Vogelsanger	202
12h00	Bill Gallagher Room	Performance Testing of Solar Thermal Systems Combined with Heat Pumps	B. Mette, H. Drück, S. Bachmann, H. Müller-Steinhagen	157
12h20	Bill Gallagher Room	Comparison of Five Approaches to Solar Assisted Cooling	P. Kovacs, B. Perers, A. Jardeby, R. Nordman and J.O. Dalenbäck	423
12h40	Bill Gallagher Room	Design and Performance of a Solar Air-Conditioning System Powered by Heat-Pipe Evacuated Tube Collectors	H. Zinian and L. Wei	195
THEME 2 (SOLAR HEATING AND COOLING), SESSION 9 - SESSION CHAIR: Prof. Jan-Olof Dalenbäck / SESSION CO-CHAIR: Mr Stefan Szewczuk				
11h00	Eskom Plenary	A Comparative Study of Brackish Water Desalination Using Indigenously Prepared Solar Desalination Unit	G.Abbas, R.Raza and A.Ahmad	25
11h20	Eskom Plenary	Experimental Study of a Humidification and Dehumidification Desalination System of Solar Air Collector with Evacuated Tubes	X. Li, Z. Wang, G. Yuan, H. Li, L. Lu and Z. Xu	414
12h20	Eskom Plenary	Solar Thermal Water Desinfection: 500 Liters of Clean Water Per Day for 500\$ Initial Investment	L. Konersmann and E. Frank	203
11h40	Eskom Plenary	A Novel System of Combined Power Generation and Water Desalination Using a Renewable Energy Source	F. Bai, A. Akbarzadeh and R. Singh	206
THEME 3 (SOLAR ELECTRICITY), SESSION 7 - SESSION CHAIR: Prof. Dieter Holm / SESSION CO-CHAIR: Prof. Wikus van Niekerk				
11h00	Ballroom 2	Panel Discussion: The Future Role of Solar Thermal Power Generation in Southern Africa	Dr. Werner Platzer, Dr. Steve Lennon, Dr. Louis van Heerden, David Jarrett, Thomas Garner	
THEME 3 (SOLAR ELECTRICITY), SESSION 10 - SESSION CHAIR: Dr Ruth Rabinowitz				
11h00	Ballroom 3	Panel Discussion - Can Renewable Energy Feed-in Tariffs Shape the Renewable Energy Future?	Panelists: Thomas Garner, Jonathan Curren, Ian Curry, Max Thabiso Edkins and Neel van der Merwe	
THEME 5 (SOLAR ENERGY AND SOCIETY), SESSION 7 - SESSION CHAIR: Prof. Wasim Saman / SESSION CO-CHAIR: Prof. John Boland				
11h00	Ballroom 4	Community Powerhouse: A Rural Electrification Model for Vanuatu	W. Mohns and D. Stein	116
11h20	Ballroom 4	Evaluation of Renewable Energy Options to Reduce Primary Energy Demand	S. Al Jandal	190
11h40	Ballroom 4	Solar Cookers in Africa	C. Menzes	170



Programme - Closing Session - Wednesday

Closing Session

Wednesday 14 October 2009

14h00 – 15h40

Eskom Plenary

Session Chairs: Mr Jon Adams

Prof. Dieter Holm Programme Committee Chairman
Welcome to Closing Session

Dr Dave Renné
Rapporteur Theme 1

Prof. Jan-Olof Dalenbäck
Rapporteur Theme 2

Prof. Wikus van Niekerk
Rapporteur Theme 3

Prof. Anna Grete Hestnes
Rapporteur Theme 4

Ms Monica Oliphant
Rapporteur Theme 5

Prof. Dieter Holm & Mr Stefan Gsänger
Announcing Congress Resolution

Mr Jon Adams
Acknowledgements

Ms Monica Oliphant
Introducing Incoming Chair
Handing over of Flag

Prof. Klaus Vajen
SWC2011 Congress Chairperson
Introducing Host Destination for 2011

