YEARS OF THE WORLD WIND ENERGY ASSOCIATION



Uniting the World of Wind Energy Since 2001

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From the Desk of the President 03

Luckily, the entire intellectual community of the world has realised that the world does not belong to us, it belongs to our children and we are merely trustees and it is our sacred duty to hand over the world in a better shape than what we have received from our forefathers.

The WWEA has been striving hard for the last 10 years in boosting up this awareness. In doing so they have brought the scientific minds of the people on the same platform repeatedly for exchange of ideas and finding out hurdles with a view to get solutions. Various governments and non-government organizations have been approaching WWEA for consultations, advices and help to tackle their local problems. These advices and consultations have helped many countries for creating legislations and laws for encouragement of Renewable Energy.

The WWEA has representatives from all the continents on its board and all of them have a high reputation in their country. Most of them are recognised international speakers and have been sharing their knowledge in a very effective manner. Several conferences, symposiums and forums have been supported by the WWEA across the globe by suggesting and providing good speakers for these events.

WWEA is very proud that it has members from 105 countries and the number is increasing day-by-day. International organisations like International Geothermal Association, International Hydropower Association, International Society Energy Society and World Bioenergy Association are extending their co-operation to WWEA.

The advent of distributed power generation by wind and other renewable energies has created need for large quantity of electrical energy storage. WWEA has been watching the development and supporting these research activities wherever called for. New ideas of tapping wind energy for the utilisation at remote places and islands have been recognised by WWEA and wherever possible, it is being supported. It has also been recognized by WWEA that there is a tremendous need of development of tapping wind energy by small devices for individuals for their small applications. We believe that there is a tremendous scope for small wind turbines

and a day will come that every roof top will have small wind turbines to meets its own requirements. Today the cost of a small wind turbine is prohibitively high because small wind turbines are not produced in mass. Efforts are to support and help developers of small but cost effective wind turbines and enactment of necessary laws which should become conducive to small wind turbine industry.

Dr. Anil Kane WWEA President



04 Welcome by the Secretary General

Dear friends of WWEA,

WWEA's 10th anniversary is an excellent occasion in order to look back and to look into the future at the same time: What have we achieved in these ten years? Where have we come from and where do we stand now? Where do we want to go? This book is intended to answer some of these questions.

WWEA has developed and matured a lot over the past decade. When the association was created in 2001, a group of like-minded and highlymotivated people and organisations came together and decided to join their forces, on an equal basis, in order to work for a renewable energy future. A groundbreaking founding document was signed, which included the basic WWEA working principles that still guide the work of WWEA today.

But naturally at the beginning WWEA had no structure, no legal status, the association had no bank account and did not even own a single pencil. A lot of work had to be undertaken in order to create a fully-fledged organization. Already during the founding press conference, the founding president Preben Maegaard had announced me as the secretary of WWEA, and I understood immediately that this would be a huge task to be fulfilled. The statutes were worked out and adopted in the following months, thus creating the governing structures. Two years later WWEA eventually got its legal status, and I became the first official employee of the association. In the year 2004, WWEA could officially open its Head Office in Bonn, close to the UN Campus. Today, five to six persons are working in Bonn for WWEA. Amongst the WWEA staff there has been a major number of young interns who took inspirations for the future careers from their work for WWEA.

Next to such "smaller" personal achievements a lot has been accomplished by WWEA on the political level, for the worldwide success of wind power and all the renewables. For me personally, WWEA's highlights are:

- the WWEC2004 in China and the following wind boom making the country the number one wind nation of the world;

- the first North American feed-in law in Ontario and the great push for community power that our WWEC2008 in Kingston has created;

- and the foundation of the International Renewable Energy Agency IRENA which has only started to have huge impact on global governance systems.



Personally I believe strongly in team play. All our achievements have become possible because WWEA stands for a great community. In this sense, I would like to thank all of those who have made our success possible and who have contributed to WWEA's work and to WWEA's achievements: To the voluntary board members who spend a lot of their time for the association, after all to our two Presidents Dr. Preben Maegaard and Dr Anil Kane, with whom it has been a privilege to work; to all our members and all their support; to the current and past WWEA staff; to our partners from the International Renewable Energy Alliance and to all our partners, supporters, colleagues and friends who have accompanied us on our way to a 100 % renewable energy world.

However, in order to achieve this target, we still have a very long way to go. Our work for a more decentralized and democratic energy supply, for a less polluting and less dangerous energy supply, in summary for a 100 % renewable energy world, will be necessary for many years to come - I am sure for more than another decade!

With best wishes!

Stefan Gsänger WWEA Secretary General

WORLD WIND ENERGY ASSOCIATION WWEA

The World Wind Energy Association WWEA Initiated at July 1, 2001 in Copenhagen by national Wind Energy Associations from the different continents will failure five working principles.

- Wind energy shall serve as one convertisms and driving force for the intendator augementation of the world energy system driven by nerewable energies to completely substitute final and bacterst average.
- Giotal dissemination of grid connected and stard alone wind energy solutions abould rely on experience gauged from the most manesulal implementation strategies, based on favorable legal, political and world framework conditions as instanted by national associations. Local and rand communities and people should be involved and should benefits directly.
- WWEA shall attend that the foundation of national and regional wind margy associations and amounting mational governments to set ambridge targets and political frameworks for priority strategies in favour of a fast and sustainable development of all energy-shalls emergies.
- WWEA will organize World Wind Energy Conferences and farther international events for mobilizing a wide range of the different wind energy applications.
- WWEA will play an active mite in the World Council for Retewahle Energies in order to work for a full substitution of all polluting and hazardous ware causing murgles.

Copyrilugan, July 1, 2001

Anstrian Wind Energy Association IGW Rearillan Wind Energy Association IGW Egyptian Wind Energy Association IBWE Egyptian Wind Energy Association Norwegian Wind Energy Association Japan Wind Energy Association South Alignan Wind Energy Association

O6 The Foundation of the WWEA

WWEA was founded in Copenhagen on the 1 July 2001. During a party the night before for an 80-year-old spiritual leader I had called Heinrich Bartelt, then Managing Director of BWE, the German Wind Energy Association. I wanted to tell him that when the following day we had a gathering in Copenhagen, for the participants it was not sufficient simply to express their support to the first World Wind Energy Conference. It was scheduled to be held in Berlin in 2002. I was convinced that they had an expectation of something more: It could be the foundation of a worldwide association for wind energy in particular to give the countries outside USA and Europe a voice. Heinrich suggested that at the gathering I should present the idea of an international wind energy association.

The initiative for the first WWEC came from a circle around Hermann Scheer, president of EUROSOLAR; Peter Ahmels, President of BWE; Peter Helm, director of WIP; and Wolfgang Palz, Director of EU Renewable Energy Research Section. It had a very understandable background. During the 1990s, Germany had become the world's major wind power nation. Year after year, with 2'000 to 3'000 MW new installed capacity, Germany did more than any other country. German wind turbine manufacturers had success with their innovative design in fierce competition with well established manufacturers especially from Denmark and now ready to present their products for sale on the world markets.

However, it soon turned out, that with modest international support for the planned Berlin conference it hardly could be called a world conference. So I was asked by the promoters if I would involve Folkecenter's quite comprehensive international network of wind energy pioneers to ensure their support to the WWEC 2002.

The following days we had our gatherings in Copenhagen. Within a few hours the statutory draft of the WWEA was finished at the Bella Center, a convention hall where an EWEA conference took place. It was agreed that the president of EWEA was the first who should receive the decision on creation of a WWEA. I was designated as the one to brief him about the new world wind energy association. This I accepted on the condition that to emphasize the global nature of the new association I needed the escort by representatives from at least two continents. The professors Galal Osman from Africa and Everaldo Feitosa from South America did not hesitate.

We explained that wind energy organisations in several countries on four continents, including two of the world's largest countries, supported the new wind energy association. The members included countries that could look forward to become major wind power nations. Therefore they had an obvious need for an organization that was responsible for their specific interests in the international arena.

From this moment the WWEA was a public reality. Subsequently we held a quickly called press conference. Together with Professor Frede Hvelplund, I told the lone representative of the press, Lynn Harrison from Windpower Monthly, that WWEA had been founded during the weekend. Her question mostly what we thought of ourselves to have the audacity to create a rival association to the dominant European and American wind energy associations. Firstly there was the general freedom to form new organisations, we explained. Now they required seats in the governing body of a wind energy association.

WWEA was a reality, which the founders celebrated at an outdoor dinner in a cozy square in central Copenhagen. During the conference days the foundation of the WWEA had become known and several new and important members joined. However, already on the second day one of the European co-founders got cold feet and left the WWEA. Others denounced the new association.

Since its establishment in July 2001 WWEA has invited industry representatives, students, researchers and other interested to annual World Wind Energy Conferences and Exhibitions. Here they have the opportunity to exchange information on scientific and technical advancements, initiate new partnerships and discuss recent trends in the wind energy industry. Over the past ten years, WWECs have attracted more than 10'000 attendees from over 90 countries. They are held in a different country each year and organised in cooperation with local partners and supported by regional and international wind energy companies and government agencies.

The concept and the association has proven to be robust and well thought out. Purpose, statutes and structure are the same. Activities are more diverse. The founding member organisations are basically the same and new members constantly registered. During WWEA's first decade two presidents have been at the head of the organisation. Till 2005 I had the privilege of being its president; thereafter Dr. Anil Kane took over.

Sometimes the creating of new associations and organisations are discussed and prepared for weeks or months and even years. The World Wind Energy Association was proposed and founded in the course of a weekend. At the 10 years anniversary it is evident that WWEA has proven to be extremely vigorous and a recognized leader in the world.

Dr. Preben Maegaard Director of the Folkecenter for Renewable Energy



08 From IRENA

It is with great pleasure that I offer my sincere congratulations to the World Wind Energy Association on the 10th anniversary of its creation.

Energy is vital to human health, education and development and is the driver of economic growth. However our current energy system excludes large parts of the world's population, and is adversely affecting our environment. We need a new way, a better way.

Fortunately there have been long-term believers in renewable energy among the global community. The tireless work and advocacy of organisations such as WWEA have created a platform of knowledge, partnerships and influence that has made the current surge in renewable energy implementation possible and the establishment of a new, dynamic industry.

The future will rely on a mix of renewables and wind energy is a vital part of this mix. Large wind power plants decrease pollution and carbon footprints of developed economies, while small-scale installations bring light and heat to isolated houses or communities, and provide the power needed for their economic development.

As WWEA starts its second new decade, it will meet new challenges, requiring innovative solutions. The difference today is that now WWEA has a growing number of partners committed to the global development and deployment of renewable energy. The International Renewable Energy Agency shares this vision and looks forward to working with WWEA to change the global energy system to one that is inclusive, clean and sustainable. Our mission will not be effective without strong support, and we invite the full involvement of WWEA, enabling us to jointly address the challenges the global community faces.

On behalf of renewable energy advocates across the globe, I would like to thank WWEA for your contribution to the world of renewable energy and wish you the best of luck in your future endeavors.

Adnan Z. Amin Director-General IRENA



The wind does not send an invoice

The message of the century is: only with renewable energies there will be a humane future. The fossil and nuclear age poses bigger and bigger problems like climate change and the traditional energy sources will be running out within the next decades. But nothing will work without energy. Only the rapid 100 % change to renewable energies can save mankind from a tremendous disaster with regard to civilisation. "The question of energy and climate is the question of survival of mankind" (Angela Merkel).

Hydropower, biomass, wave energy, geothermal energy and tidal energy are – unlike coal, gas, oil and uranium - at our disposal forever. Not everywhere, however. But solar and wind energy are available in large quantities everywhere. This is why they are the most important energy sources of the future. They guarantee an energy policy of proximity. Theoretically, the sun sends us 15'000 times more energy than all the people are consuming nowadays. And wind energy provides 300 times more. This means: we have also practically what we need for all time. Sun and wind are the main pillars of a sustainable, inexpensive and peaceful energy supply of the future. They protect the climate and don't destroy it. And we have the economic advantage that sun and wind will not send an invoice.

They are heaven-sent gifts. We should, of course, ensure by a decentralised energy supply, that they don't need long transport routes. Solar energy from the Sahara for Europe and offshore wind energy which has to cover a long distance, gamble away the economic advantages of renewable energies. At the moment, offshore wind energy costs twice as much in Germany than wind energy which is generated onshore or on land. Renewable energies are particularly favourable if they are produced in the region for the region.

Ten years ago, the WWEA (World Wind Energy Association) had a good start. Thanks to all the pioneers — especially Hermann Scheer and Preben Maegaard. But the longest part of the way is still ahead of us. Wind energy represents the "wind of change" to a 100 % solar world economy.

The human right to energy for all people can only be realised rapidly by wind energy. Wind energy technologies are the most developed. We have to learn to manage the gift of the wind in an intelligent way.

Dr. Franz Alt Journalist



Community Power and WWEA

To me the most remarkable attraction of the World Wind Energy Association is the concept of Community Power. This really differentiates WWEA from other bodies working in the field of promoting renewable energies, and wind energy in particular. Community Power goes well beyond the well-known realms of technology, economy and environment. Community Power is a message that speaks to the heart. A message to the heart is a Message of Wholeness. If one attempts to define, analyze and take wholeness apart, then the sum of the lifeless components will invariably be less than the original. Hence, Community Power should be seen to mean many things in many contexts.

To some it means democratization of power in the political sense: Wind power enables distributed power generation and offers freedom from power oligopolies or even monopolies. Centralised energy monopolies and centralised government are both tempted to enter into unholy alliances that are not in the interest of communities they are supposed to serve.

To others, Community Power means placing the means of energy generation near the point of consumption in the technical sense. This can reduce transmission and distribution losses. Here the benefits of economies of scale provided by centralisation are weighed up against the benefits of reducing and stabilising the network. It can also reduce system vulnerability against instability, theft, sabotage or even war. Distributed generation can enable cogeneration, which is significantly more energy efficient than centralised fossil or nuclear power stations. Community Power may mean the power of a community where there is a common understanding and a shared value system within a community. Communities with a common purpose wield considerable power and are more stable. They tend to think and act in terms of generations, rather than the short-term advantage of transient individuals. In the mindset of many simplistic Darwinists, nature is a matter of survival of the fittest. In humankind this is often interpreted to mean there is brutal competition for resources leading to be the survival of the most ruthless. However in nature there are more examples of cooperation, symbiosis and mutuality than brute competition. There are many lessons to be learnt about competitive and cooperative behaviour of communities in nature and humankind.

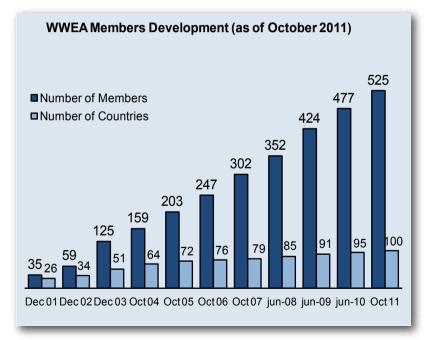
Finally, Community Power also includes the power for a community, meaning that the community is the joint owner of the means of energy generation. This may imply a wide spectrum of ownership models, which may be defined in terms of space, time or resources. Community Power means that a community "takes ownership" and assumes responsibility for the consequences. This I would call "the Culture of the Common Good".

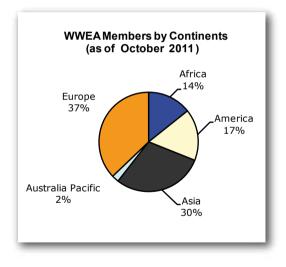
For these reasons my wife and I feel very at home with WWEA. No doubt many others feel likewise. We remain thankful to Herman Scheer and Herman Oelsner who introduced us nearly eight years ago.

May WWEA's future flourish further through fostering the culture Community Power!

Prof. Dieter Holm, ISES Vice-President

WWEA's Members





12 WWEA's Members

More than 500 members from more than 100 countries on all continents

10 World Wind Energy Conferences have attracted more than 10'000 attendees from over 90 countries

WWEA's Head Office

Country of Origin of the WWEA's Board Members as of 30 september 2011

Countries with WWEA Members

World Wind Energy Conferences

Over 200'000 people visited WWEA's website during 2010 with more than 300'000 information requests processed

WWEA yearbook "Wind Energy International" has become the international standard yearbook: four editions and more than 4'000 copies sold since 2005.

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14 Who represents WWEA



WWEA President Dr. Anil Kane India



Senior Vice-President (appointed) The Hon. Peter Rae AO Australia



Prof. Chuichi Arakawa Japan Vice-President



Prof. Dr. He Dexin China Vice-President



Prof. Dr. Galal Osman Egypt Vice-President Prof. Dr. Choong-Yul Son South Korea Vice-President

The WWEA Board as of 30 September 2011



Heinrich Bartelt Germany Vice-President



Prof. Dr. Everaldo Feitosa Brazil Vice-President



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Air Marshal (R) Shahid Hamid Pakistan Vice-President



Prof. Dr. Eng. Erico Spinadel Argentina Vice-President

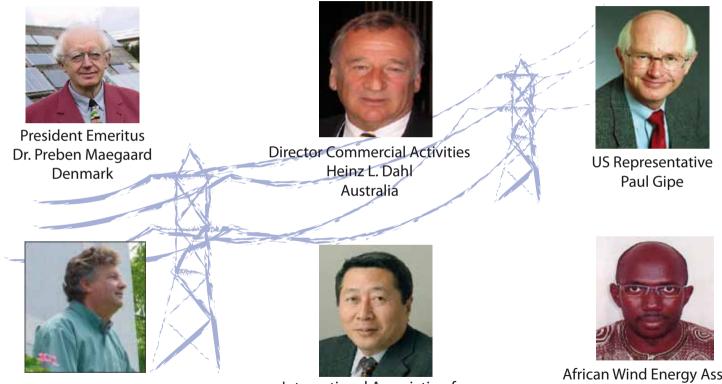


Prof. Dr. Tanay Uyar Turkey Vice-President



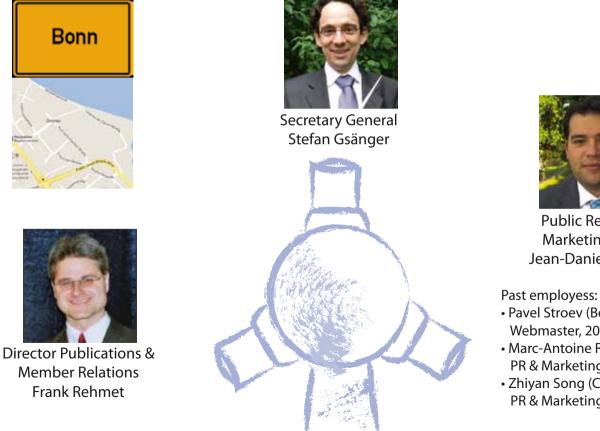
Volker Thomsen Canada Treasurer

16 The WWEA Board as of 30 September 2011



International Solar Energy Society Prof. Dr. Dieter Holm International Association for Wind Engineering Prof. Yukio Tamura African Wind Energy Association Representative Dr. Ibrahim Togola Mali

The WWEA Head Office





Public Relations & Marketing Officer Jean-Daniel Pitteloud

- Pavel Stroev (Belarus) Webmaster, 2002-2005
- Marc-Antoine Renaud (Canada) PR & Marketing Officer, 2008-2009
- Zhiyan Song (China) PR & Marketing Officer, 2009-2011

18 Interns

▲ Daisuke Hayashi (Japan/USA), May-June 2004 Liego Aguilera (Colombia/Denmark), June-Aug 2004 🖊 Vikas Godara (Australia), Oct-Nov 2004 🙏 Gyula Bodnar (Hungary), Dec 2004 - Jan 2005 🙏 Crystal Hultao Zou (China/Germany), Mar-Apr 2005 🙏 Atuhaire Rodgers (Uganda), June-July 2005 ★ Tony Okpokam (Nigeria), June 2005 Kictor Massita (Kenya/Namibia), July 2005 Leff Chao-Yang Tsao (Taiwan/China), Aug 2005 📥 Anne Kuhl (Germany), Aug-Sept 2005 Luke Evenbom (USA/Sweden), Jan-June 2006 L Daniel Maerevoet (Germany), Mar-Apr 2006 Luciano Hauschildt (Brazil), May- July 2006 ▲ Jamie Graham (USA/France), July-Sept 2006 ▲ Han Xlaochong (China), Oct 2006 人 Stuart Thomson (UK), Jan-Mar 2007 🙏 Aimee Wilson (USA), June-Aug 2007 🙏 Cristina Lim-Memedovski (Philippines/Germany), Sept 2007 - Feb 2008

Lori Borgal (Canada), Aug- Dec 2008

🙏 Jessica Klein (Germany), Aug 2008-Mar 2009



10 Years of WWEA



2001: The Founding of WWEA

In 2001, a number of high profile research institutes and national wind energy associations gathered to found the World Wind Energy Association (WWEA). WWEA founding members include the national wind power associations of Australia, Austria, Brazil, Egypt, Germany, India, Japan, Norway, and South Africa as well as research institutes from South Korea and Russia. Professor Everaldo Feitosa of the Brazilian Wind Energy Association supports the foundation with enthusiasm, noting: "Up to now our membership in different wind energy associations hasn't brought us any considerable results. Just the few weeks of WWEC preparation, however, brought us an excellent exchange of experience. Within the community of international wind energy associations we feel much more independent in preparing the introduction of wind energy in our countries independent of any company interests."

Hermann Oelsner from the African Wind Energy Association (AfriWEA) has also been an enthusiastic supporter of the WWEA. "During the preparatory meeting of the 1st World Wind Energy Conference in Berlin we felt like an equal partner of the wind energy community for the first time in many years. It will not help us simply to apply certain systems and concepts from industrialised nations in our countries. Especially in today's pioneering phase we have specific problems and questions in South Africa and we want to be taken seriously."

One year after its establishment in July 2001, WWEA organised its first annual World Wind Energy Conference in 2002. Since then, WWEA's annual World Wind Energy Conference and Exhibition have become a meeting point for the world fo wind energy, for entrepreneurs, scientists, politicians, students, and everybody else who is involved in wind power.

WWEC2002: Berlin, Germany

1st World Wind Energy Conference

The first World Wind Energy Conference sought to mobilise a wide range of different wind energy actors and activists, , with 600 delegates from 60 countries.

In the manifesto "A Global Strategy for Wind Energy", the conference formulated the basic conditions for the world-wide proliferation of wind energy. The WWEC2002 identified practical, technical and legislative barriers, which eventually slow down the worldwide use of wind energy generation. Nine strategic cornerstones for the world-wide proliferation of wind energy were presented as well and the WWEC called for the establishment of IRENA.

World Wind Energy Award 2002

The first World Wind Energy Award honoured the work of Prof. Amin Mobarak from Egypt, for making Egypt the leader country in the Mena region.

Since the late 1970's, Prof. Mobarak was one of the first and main pioneers of wind power in Egypt and he was instrumental in making the country the leading wind energy country in Africa and the Arab world.





WWEC2003: Cape Town, South Africa 21

2nd World Wind Energy Conference

Organised in partnership with the African Wind Energy Association, the WWEC2003 was attend by more than 400 participants. The conference focused on defining strategies for the implementation of renewable energy systems for developing countries. The WWEC2003 resolution called upon the WTO to amend its laws and that world trade laws must not restrain the proliferation of wind energy and renewables in general. It was also stated that development programs must focus on the establishment of local renewable energy industries. The WWEC2003 also suggested to introduce an additional Kyoto mechanism focusing on renewable energy implementation. During the event, the South African government announced the ratification of its White Paper for renewable energy.

World Wind Energy Award 2003

In 2003, the award went to Indian wind turbine producer Suzlon, headed by founder, chairman and managing director Tulsi Tanti. Starting in 1995 with only 20 workers, the company has become one of the world's leading turbine suppliers. Today, Suzlon is patronised by hundreds of customers across the world, from small, middle and big size companies, multinational corporate agencies, private and public sector enterprises, community ownership and even individuals. After the acquisition of German REpower, Suzlon ranks third among the leading wind power equipment manufacturers in 2010.







22 WWEC2004: Beijing, China

3rd World Wind Energy Conference

The WWEC2004 in Beijing was the biggest wind energy event ever held outside Europe and North America, with more than 1000 delegates and more than 3000 visitors at the accompanying WWEC exhibition, amongst them high-level government representatives from all continents. The event expressed strong support for the development of Renewable Energy in China and gave a decisive impetus for making China the leading wind energy nation in the world few years later.

On the occasion of the WWEC2004, the first draft "Sustainability and Due Diligence Guidelines" were presented to the public for discussion.

World Wind Energy Award 2004

Jürgen Trittin and Dr. Herman Scheer jointly received the award. Serving as Germany's Minister for the Environment, Nature Conservation and Nuclear Safety from 1998 to 2005, Trittin played a key role for Germany's Nuclear Phase-Out Programme. He was an enthusiastic supporter of Germany's Feed-In Tariff Law, which was adopted in 2000.

Winner of the Right Livelihood Award, President of Eurosolar, General Manager of the World Council for Renewable Energy (WCRE) and member of the German Parliament, Hermann Scheer was one of the most influential figures in the international renewable energy movement: He passed away unexpectedly in October 2010. Throughout his professional career he was

dedicated to elaborating policy concepts for renewable energy dissemination and was responsible for numerous legislative energy frameworks in the European Union and worldwide. He has also been recognised as the founding father of IRENA.

Jürgen Trittin: "Receiving the World Wind Energy Award in 2004 together with Hermann Scheer was, in my eyes, recognition of our success in promoting Germany's highly effective system of support for renewable energy in the rest of the world. I was especially pleased that the presentation of the award took place in China, because I could already see the first signs that China was beginning to move very strongly into renewable energy."

The Honorary Award went to the Chinese Wind Energy Association and Prof. He Dexin.



WWEC2005: Melbourne, Australia 23

4th World Wind Energy Conference

The WWEC2005 was attended by more than 300 delegates. The WWEC2005 resolution focused on two main topics for the future of renewable energy: the combination of the different renewable energy sources and the importance of technology transfer. The conference also expressed confidence that wind energy generation will achieve the 2020 targets as presented by the International Energy Agency well prior to 2020. During the WWEC2005, the government of Victoria announced to extend its support scheme for renewable energy in spite of the lack of support on the national level.



World Wind Energy Award 2005

The 2005 award went to Hon. Vilas Muttemwar, Former Minister for Non-Conventional Energy Sources and Dr. Pramod Deo, Chairperson of the Maharashtra Central Electricity Regulatory Commission.

Hon. Vilas Muttemwar and his Ministry were honoured for driving India to the top four wind energy generating nations in the world. The energy expert Dr. Pramod Deo strongly promoted the utilisation of decentralised energy generation units, renewable energy sources and captive power.

Dr. Anil Kane elected as WWEA President, succeeding Dr. Preben Maegaard



24 WWEC2006: New Delhi, India

5th World Wind Energy Conference

More than 900 delegates attended WWEC2006 and listened to his Excellency, the President of India, Dr. Abdul Kalam who inaugurated the event stating: *"The crying need therefore is to look for renewable energy that alone can ensure sustainable development." He called for "a comprehensive renewable energy policy with mandatory and time-bound provisions is an urgent need of the hour."*

The WWEC2006 resolution recognised the worldwide challenge of capacity building and the creating awareness for energy independence and the need for institutional networking towards that end. The conference welcomed the decision of the International Geothermal Association to join the REN Alliance, now comprising four major international renewable associations. The Conference also welcomed the development of a Memorandum of Agreement with the International Association for Wind Engineering IAWE and looked forward to close cooperation in the achievement of our mutual objectives.



World Wind Energy Award 2006

In 2006, the award went to the Chinese company Goldwind, represented by its CEO Mr. Wu Gang. In 2006, Goldwind achieved a domestic market share of 33% and was ranked Nr. 10 globally based on annual installed capacity. Five years later, Goldwind is among the five largest wind turbine manufacturers in the world.



WWEC2007: Mar del Plata, Argentina

6th World Wind Energy Conference

600 delegates attended the WWEC2007 in Argentina. The conference touched a wide range of topics linked to such obstacles and future challenges for wind power in Latin America, one major challenge being the establishment of domestic wind industries and manufacturing capacities within the region. The worldwide shortage of wind turbines affected the region heavily because only little manufacturing capacities were set up in Latin America. The conference also underlined the need to take into account the key role of renewable energies and to create the long-term frameworks for their full deployment for the success of the Post-Kyoto arrangements and goals on mitigation of climate change.

World Wind Energy Award 2007

The 2007 award went to the key persons behind the Brazilian Renewable Energy Programme PROINFA, which started the development of wind energy utilisation in Brazil, the leading wind energy country in Latin America. The PROINFA programme was unique in setting a 60% local content provision for Brazilian wind farms. This requirement has led to the creation of a major domestic wind industry.

The Award was given to the Hon. Ms Dilma Vana Rousseff, Ms Laura Porto, Mr. Valter Luiz Cardeal, Dr. Sebastião Florentino da Silva. As Minister of Energy, Dilma Rousseff was responsible for elaborating the national energy plan. Five years later, in 2010, Hon. Ms Dilma Rousseff was elected as President of Brazil.

The Honorary Award went to the Secretary for Environment of Buenos Aires Province.

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26 WWEC2008: Kingston, Ontario, Canada

7th World Wind Energy Conference

Community Power: Energy Autonomy for Local Economies

WWEC2008 focused on the special topic of Community Power, referring to the development and ownership of renewable energy projects by local communities including farmers and landowners, cooperatives, Aboriginal Groups, municipalities, utilities, educational institutions and other partners. More than 900 participants discussed all aspects of such community based ownership models in more than 100 presentations and a special series of workshops on how to build a community wind farm.

The conference proposed a Green Energy Act for Ontario, presented at the conference to the Energy Minister of the Province of Ontario and Deputy Premier, Hon. George Smitherman who took the initiative up.

World Wind Energy Award 2008

The seventh award went to Ms Jane Kruse, Dr. Preben Maegaard and Paul Gipe as the pioneers in community wind power in Europe and in North America. Paul, Jane and Preben started working with renewable energy in the 1970s. They have advised numerous governments about how to implement wind energy, based on the idea of broad social involvement and community ownership, in order not only to increase the social acceptance of wind farms, but also to achieve real participation of as many people as possible. Paul Gipe: "Sharing the World Wind Energy Award 2008 with my good colleagues Preben Maegaard and Jane Kruse of the Folkecenter for Renewable Energy was one of the highlights of my career. The award for our work documenting the success of community-owned renewable energy development in Denmark and Germany helped put "Community Power" on the international agenda. Until our award in 2008, wind energy in particular was seen worldwide as solely the domain of utility companies and their private-sector brethren. The award recognized that there is another way, another path to renewable energy development, one that shares the promise of profiting from renewable energy with the people who have to live with it."

The Honorary Award 2009 went to the goverment of the Province of Ontario, Canada.



WWEC2009: Jeju Island, South Korea 2/

8th World Wind Energy Conference

Wind Power for Islands – Offshore and Onshore

The WWEC2009 was attended by more than 600 participants and focused on wind energy utilisation on islands as well as around islands: offshore applications as well as hybrid and stand-alone systems. Both are key technologies for the shift towards a future global energy supply based on 100 % renewable energy. Renewable energy hybrid systems were identified to play a future key role in providing electricity for islands which often possess an abundance of wind and other renewable resources. Such technologies are also increasingly important for rural electrification in remote or unserved areas.

The WWEC2009 also welcomed that the World Bioenergy Association joined the REN Alliance so that all the major world technology associations are working closely together.

World Wind Energy Award 2009

The eighth award went to George Smitherman, Minister of Energy and Infrastructure for the province of Ontario. Under his political responsibility and leadership, Ontario's Green Energy and Economy Act was passed in September 2009. The Act is the first feed-in law in North America and encouraged investment in renewable energy production by providing businesses the ability to sell energy produced from renewable sources to the province's electricity grid at a fixed price. An important part of the Act is the explicit recognition and empowerment of community power, that is individual citizens, municipalities, cooperatives, farmers and aboriginal communities. For these investors, a special premium has been provided.

The Honorary Award went to the Governor of Jeju Province, Mr KimTae-Hwan.



28 WWEC2010: Istanbul, Turkey

9th World Wind Energy Conference

Large Scale Integration of Wind Power

Main topic of the WWEC2010 was how to integrate large capacities of wind power into existing grid infrastructure and how to adjust grid capacities. Turkey with 80 GW wind projects waiting for permission is an excellent example for the corresponding challenges and opportunities. Integration of wind power was discussed as an important condition for a transformation of the energy supply towards 100 % renewable energy.

WWEC2010 was attended by more than 400 delegates and additional 1000 visitors at the exhibition. The Conference endorsed the proposal of a Global Feed-in Tariff programme in order to expand appropriate national, regional and international financing mechanisms for the exclusive realisation of renewable energy.



World Wind Energy Award 2010

The Award went to the founding member states of the International Renewable Energy Agency IRENA being represented by IRENA's Interim Director General, Ms Hélène Pélosse. The founding of IRENA sent out a very strong signal to the world community that renewable energy will have to play and will play a key role in the future energy supply all over the world. WWEA as one of these initiators and strongest proponents of IRENA since its own foundation in 2001 expressed its strong commitment to continue and extend its close cooperation with IRENA.



WWEA's Achievements

2001

Foundation of the WWEA in Copenhagen on the 1 July 2001.

2002

WWEA organized its first annual World Wind Energy Conference in Berlin in July 2002.

2003

During the 2nd World Wind Energy Conference in Cape Town in 2003 the South African Government presented, after years of discussion and delay, the White Paper for Renewable Energy, and WWEA recommended the introduction of a feed-in tariff in order to tap the great potentials of wind energy in the country.



2004

More than 300 guests from around the world attended the opening ceremony of WWEA's Head Office in Bonn on 1 June 2004.

The International Renewable Energy Alliance (REN Alliance) was founded during the Bonn International Renewable Energy Conference Renewables2004.

As the first government, the government of Pakistan declared support for creation of IRENA during the WWEC2004.

China adopted its first Renewable Energy Law in 2005 as a consequence of the WWEC 2004 in Beijing. Based on this legislation, China became in the following years the leading wind energy country worldwide.

2005

WWEA officially launched the "Sustainability and Due Diligence Guidelines" for companies, public authorities and all other parties involved in the wind energy sector, setting clear standards for a strong growth of the wind industry.

Being a strong advocate of feed-in tariffs, WWEA was pleased to announce that Turkey introduced a Renewable Energy Law including a feed-in tariff.

WWEA launched the Small Wind and Hybrid Systems Working Group,

comprising members from all continents.

WWEA launched the first edition of its yearbook, Wind Energy International 2005/2006. In the following years, the yearbook has become a basic source of information for all those dealing professionally with wind energy. In the first edition, the book included 65 country reports, and 45 special reports.

2006

WWEA, in association with the Indian Wind Energy Association InWEA, noted the strong endorsement given to the development of renewable energy including wind power by His Excellency the President of India, Dr Abdul Kalam. In the opening of the conference, the President said: "The crying need therefore is to look for renewable energy that alone can ensure sustainable development." It was the first time that a head of state expressed such deep support to renewable energy.

The International Geothermal Association joined the REN Alliance.

WWEA launched a new technology education website (www.worldwind-energy.info), accessible by anyone and free of charge.

2007

WWEA obtained Special Consultative Status at the United Nations.

One of the most important consequences of WWEC2007 in Mar del

Plata, Argentina, was that it started the GENREN tender, launched by Her Excellency the President of Argentina, Cristina Kirchner on a Feed In Basis, with 754 MW wind energy assumed to start partially operating grid connected by the end of 2011.

The second edition of WWEA yearbook Wind Energy International was released.

2008

The Ukrainian Parliament adopted a feed-in tariff as the first CIS country, paving the way for renewable energy generation in the country.

WWEC2008 in Kingston, Canada, is the first ever international event fully dedicated on community power. As a result, the first feed-in law in North America was adopted a couple of months later: Ontario's Green Energy and Economy Act, North America's first comprehensive guaranteed pricing structure for renewable electricity production with the world's first special incentive scheme for community power.

2009

The International Renewable Energy Agency IRENA was founded in Bonn on 26 January. At the Founding Conference, 75 States sign the Agency's Statute.

The Community Power Working Group of WWEA was launched during the eighth WWEC on the Jeju Island, South Korea.

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South Africa's National Energy Regulator announced the introduction of a system of feed-in tariffs. The tariffs for wind energy and concentrating solar power are among the most attractive worldwide.

The International Bioenergy Association joined the REN Alliance in June, which now comprises five international organisations representing bioenergy, geothermal, solar, hydropower and wind technologies.

WWEA published its annual report on the worldwide development of installation capacity: The World Wind Energy Report 2008, published in several languages, gets downloaded 70'000 times.

The third edition of Wind Energy International 2009/2010 was published in June.

For the first time, WWEA's proposal for a Global Feed-in Tariffs (FIT) was discussed at the UN Climate Change Conference COP15 in Copenhagen. A number of other international organizations took the basic idea up and presented similar proposals.

2010

WWEA organised the first World Summit for Small Wind, in Husum, Germany, the first international event especially focusing on small wind turbines. Participants from all over the world discussed matters of international certification of small wind turbines and the status of international markets.



2011

The members of WWEA's Community Power working group, representing all continents, agreed on the a definition of Community Power in order to give clear guidance to policymakers as well as to others involved in renewable energy and the general public. They agreed on the potential of Community Power to further accelerate the deployment of wind and other renewable energy technologies.

Pakistan announced its first Feed-in tariff programme for wind energy.

32 Symphony of the Renewables

REN Alliance

The International Renewable Energy Alliance (REN Alliance) was formed during the Bonn 2004 International Renewable Energy Conference, and was established to advance policy and information on renewable energy by providing a combined voice for renewable energy technology and practice.

The REN Alliance bridges the gap between policy and practice by building on the synergy of its partner organisations to achieve progress through their collective experience and knowledge. The partners comprise international organisations representing bioenergy, geothermal, solar, water and wind technologies.

The REN Alliance's goal is to advance policies that favour the increased deployment and use of renewable energy by fostering collaboration, removing barriers, promoting successful implementation strategies, enhancing business conditions and developing markets. This goal is to be reached by the provision of reliable and up-to-date information for improved decision making at all levels of policy, for a secure supply of clean energy through sustainable development.

The REN Alliance builds linkages through common interests within the renewable energy community and related policy bodies. As such, it is open to collaborate with all relevant agencies and networks with similar objectives. As an example, the International Renewable Energy Agency and REN Alliance, representing technology and practice, have agreed to work together to accelerate the scaling up of renewable energy deployment worldwide.

The REN Alliance comprises five member organizations.



WWEA's Partners 33

Besides WWEA, the International Hydropower Association (IHA) is one of the founding members of REN Alliance. IHA is a non-profit international organisation founded in 1995 under the auspices of UNESCO. The mission of IHA is to be the global organisation advancing hydropower's role in meeting the world's water and energy needs. It has consultative status with several UN bodies, and works in partnership with various governments, financial agencies and civil-society organisations. IHA is also involved in work to assess water-energy interrelationships, evaluate greenhouse gas footprints, investigate financial models, monitor markets, and report on levels of deployment.

The International Solar Energy Society (ISES) is also one of three founding members. Since 1954, ISES has been actively engaged in advancing the science, technology, policy and education needed for the efficient use of renewable energy and practical applications. ISES represents thousands of scientists, technical experts, industry delegates and related professionals.

The International Geothermal Association, with more than 3'500 members in over 64 countries, joined REN Alliance in 2006. The IGA has a special consultative status with the Economic and Social Council of the United Nations and is a Partner of the European Union in their Campaign for Take Off (CTO) for the promotion of renewable energy. IGA is the owner of the company IGA Service GmbH that undertakes work on contract to advan-

ce the aims of the Association.

The latest organisation to join REN Alliance in 2009 is the World Bioenergy Association (WBA). Since its foundation in 2009, the WBA has been working to address a number of pressing issues including certification, sustainability, standardisation, bioenergy promotion, and the debates about bioenergy's impact on food, land-use and water supplies.



34 Symphony of the Renewables



Roland N. Horne President, International Geothermal Association

The International Geothermal Association (IGA) congratulates the World Wind Energy Association on its tenth anniversary. The IGA and WWEA are both "associations of associations" representing the renewable energy resources of geothermal and wind energy respectively. IGA and WWEA have worked together through the REN Alliance, to fulfil our shared objectives of education, information and outreach. WWEA has been represented at renewable energy sessions of geothermal energy conferences, including importantly the "Symphony of Renewables" event at the World Geothermal Congress in Bali, Indonesia, in April 2010.

As the world moves towards greater reliance on renewable energy, the interdependence among different types of renewable sources has been the key to success and an advantage to all of us. Geothermal energy and wind energy are good renewable partners, with base-load geothermal energy able to fill in gaps of windless episodes. WWEA and IGA, together with the other partners of the REN Alliance, will continue to work together for a better, greener, energy future.



Richard Taylor Executive Director, International Hydropower Association

WWEA has, since 2004, been a key partner of the International Hydropower Association (IHA), in the International Renewable Energy Alliance (REN Alliance). The REN Alliance was formed during the Bonn 2004 International Renewable Energy Conference to advance policy and information on renewable energy by providing a combined voice for renewable energy technology and practice. Along with the International Geothermal Association (IGA), the International Solar Energy Society (ISES), and the World Bioenergy Association (WBA), WWEA has shown great leadership in bringing the renewables family together in a common cause.

Combining wind with hydropower enables the aggregate power supplies to be both flexible and resilient in the face of climate change, without the need to resort to support from fossil fuels. There are a number of important synergies between wind and water. For example, fluctuations in energy provision from wind can be balanced with the energy storage capacity and operational flexibility of hydropower. Equally, at times when wind power is surplus to demand, it can contribute by off-setting hydropo-

WWEA's Partners 35

wer production and allowing more water to be stored in reservoirs for times of peak demand. Surplus wind power can even be used to pump additional water back into reservoirs for the same purpose. These possibilities, once questioned by policy-makers and others, are no longer theoretical; they are now becoming common practice. This is so much so that there is now a major work programme, particularly in Europe, for hydropower modernization to build in more storage and pump-storage to the electricity system. This is mutually reinforcing, as the more hydro storage there is in a system, the more wind power can continue its remarkable progress.

WWEA and IHA collaborate on five key strategic areas of activity through the REN Alliance:

- Interpretation of renewable energy potentials
- Refinement of future deployment scenarios
- Definition and guidance on sustainability assessment
- Review and recommendations on financing renewable energy
- Optimizing renewable energy systems

All five of these activity areas are of key importance to both IHA and WWEA.

WWEA's leadership role in ensuring renewable energy provision through wind is helping to provide energy security as well as a number of other benefits such as reductions in carbon emissions and other air pollution, reductions in dependencies on fossil fuel imports (and the associated price risks), and job creation. This is in the best interests of both people and the planet. WWEA has made considerable advances in raising awareness of the potential of renewable energy at both the public and policy levels, which has led to reciprocal benefits for other forms of renewable energy, including hydropower.

IHA is pleased to have had the opportunity to work closely with WWEA, since 2004, in the successful promotion and development of renewable energy, and looks forward to continuing this valuable collaboration. On WWEA's 10th anniversary, IHA would like to send warm congratulations to all WWEA members and officers.



6 Symphony of the Renewables



David Renné President of the International Solar Energy Society

This 10-year Anniversary publication of the WWEA is an excellent opportunity for the International Solar Energy Society (ISES) to reflect on the many positive benefits gained through our relationship with the WWEA, and the REN-Alliance. I first engaged with this group was at our own Solar World Congress 2009, held in Johannesburg, South Africa. Stefan joined our BoD meeting, and the REN-Alliance held the first in a series of events called the "Symphony of Renewables".

Our next engagement was at the COP-15 event in Copenhagen. The REN-Alliance, under the leadership of the IHA but also through the enormous prestige of the WWEA was able to gain some high profile publicity through press conferences, interviews, and participation in key side events, as well as through the REN-Alliance booth in the exhibit hall.

In January 2010, at the World Future Energy Summit in Abu Dhabi, the REN-Alliance held several high-level meetings with major stakeholders such as IRENA and Masdar. Later, ISES participated in two "Symphony of Renewables" events at the IGA and IBA conferences in Indonesia and Sweden, respectively. My next REN-Alliance meeting was in Istanbul where the Director General of IRENA chaired our Symphony of Renewables event at WWEA's Annual Conference. In October the REN-Alliance held an Optimization Workshop and a side event at the Delhi International Renewable Energy Conference. Finally, the Alliance organized an area of information booths at COP-16 in Cancun, and conducted a Side Event on the role that all renewable technologies can play in a Global Feed-in Tariff program (GET FiT) proposed by the Deutsche Bank.

All renewable energy technologies play important and unique roles in the marketplace. The REN-Alliance partners provides a unique opportunity to ISES to demonstrate how solar technologies will continue to play a key and growing role with these other technologies in achieving a renewable energy future.



WWEA's Partners 37

ASSOCIATION

Karin Haara

Executive Director, World Bioenergy Association

The World Bioenergy Association, WBA, the youngest of the global renewable associations congratulates the World Wind Energy Association, WWEA, on its 10th birthday.

Since 2009, when WBA became a member of REN Alliance, we have been working together with WWEA as partner on the task to create a 100% renewable energy sector. The collaboration has been very successful.

Wind energy is different from biomass for energy as an energy source. To make it simple: wind, as a flowing energy source, is convenient to use when it's blowing, while biomass is used when it's needed. Therefore in an energy system it's excellent to combine the two for filling the gap between need and use.

Another difference is that basically wind is used for generating electricity, while biomass can be used for production of electricity, heating, cooling and transport fuels. In modern energy systems, however, the borders are growing blurred. The energy carrier electricity is used for heating, cooling and even for vehicles. And batteries in vehicles are used for storing wind energy.

The conclusion will then be that all energy sources can be used for any purposes. So the challenge will be to optimize the application of various renewable options in the energy system on decreasing the greenhouse gas emissions, increasing the sustainability and increasing the efficiency and then choose the energy source that at every time fulfil these targets best.



38 Looking into the future by Volker Thomsen

OOur own projection for the installed wind energy capacity for 2020 is 1,6 million MW. Coming from presently 200'000 that seems to be impossible. However we are just using the average growth rate of the last 10 years to get to this estimate. Considering that there will be additional countries and new players and a continuous move from fossil fuels to renewable energy that is most likely a conservative vision.

The unpredictable political climate will probably present us with a roller coaster of interim uncertainty. The present more or less "peaceful" revolution has unprecedented dimensions. What looks like affecting primarily the Arabic and Moslem World may turn out to be a universal shift to different values, structures and last but not least innovative green technologies and overall sustainable systems. This kind of IT, Facebook and Linkedin movement travels at a speed of light and potentially enables young bright minds with a mobile devise in their hands to conquer armies and whole continents. Once the air clears and the dust has settled this will open up a new world of options with huge opportunities for each community including new technologies and improvements of existing technologies.

Changes that took tens or even hundreds of years before happen now overnight and from that perspective there is a fundamental shift to much more consciousness and awareness.

Being optimistic, we will see the WWEA in the centre of the bright light of global change and even more than in the past help to reshape policies and technologies and transfer these wherever they are needed.

The Oil or Military Age is coming to an end. We are still fighting wars for oil. But once people everywhere detect or re-experience the vast local resources it will trigger a different and new form of local industrialization and development. That will enable each community on this planet in one form or the other to direct their own economic development particularly based on their own ability to generate local independent electricity or energy to be used to create local prosperity. Once this is fully understood we cannot any longer see any logical advantage in focusing on trying to secure far away energy sources to employ them in massive inflexible systems. Why not utilize our own we have plenty of it everywhere.



The Future belongs to renewable energy. Each of our annual WWECs where milestones and triggered a lot of dynamics. The first World Wind Energy Conference with a focus on Community Power 2008 in Kingston has re-set the global stage for community development and this year's theme will show case that even deserts have unlimited resources of energy. It is therefore of great symbolic value that we link Community Power to "Converting Deserts in Powerhouses" that will develop one "OASIS" at the time. Deserts do not in the classical sense have to be sand deserts only. Human beings have created many type of deserts including huge salt lakes, concrete deserts and huge abundant spaces destroyed by surface mining like the oil and tar sands in Canada or even big brown fields from past industrial eras everywhere including in most big cities. All of these natural or manmade deserts will need to be converted into an oasis of natural sustainable life. Energy independence, top efficiency and a smart grid will reduce our consumption, decrease the environmental impact and allow us to enhance CO2 reductions in all areas.

Food, Energy, Construction and Transportation are the drivers. Agriculture, Energy, Shelter and transportation have always been at the centre of our cultural, social and economical development. No surprise that we have tried to optimize the productivity and the efficiency to an extend that we can provide for everybody. However we have in some instances truly left natural and balanced pathways and exchanged them with so called improvements that not necessarily turn out to be in our favour. It is very questionable if the aggro or agri industry in the long run truly is more efficient than agriculture. There are many indications that the agri industry is creating sick soils and within a series of radio shows by our valued friend David Suzuki he recently show cased that traditional farming improved by better technologies may be more efficient than the industrial approach. The loss of soil is alarming but enhanced techniques to use cultures that organically and efficiently can convert destroyed soil back into fertile good compost are promising a turn around back to balance and harmony.

Remembering that one tea spoon of healthy good top soil has up to 100 million micro organisms we are reminded that the future well being of mankind will rely on sustainable agriculture and energy production that support each other and help to maintain a healthy cycle of life. Energy independence, top efficiency and a smart grid will reduce our consumption, decrease the environmental impact and allow us focus on CO2 reductions.

We have depleted the Oceans and as a result we have to go further and further out, employ smarter and better ships just to catch less and less. Instead of harvesting in a balanced way our exploitation of any resource is leading us into a dead end. There are great similarities with our present energy industry, agri industry and fishing industry. We drill more and more but will less and less be able to satisfy our needs. At the end of this glimpse into the future I predict that the WWEA is particularly well placed to help meeting future needs.

40 Looking into the future by Volker Thomsen

Where will our focus need to be in the future? There are no magic bullets we are already doing a lot of the right things. Co-operating with our colleagues from other renewable technologies is one of the keys. If we are united and supporting each other we will furthermore be able to help organisations like IRENA, REN Alliance, REN21, World Future Council and many others to gain in momentum and recognition as well as with growing importance of changing and improving policies world wide.

It is of utmost importance to continue our concerted drive on feed-in tariffs that will strongly support de central and distributed power generation.

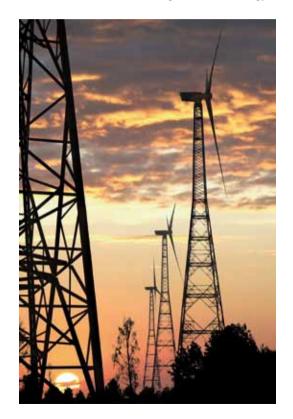
Community development, supporting agriculture and inspiring young people to better be prepared for a work force that increasingly requires hands on and at the same time an increased intellectual capacity to understand and work with sophisticated systems.

The WWEA will together with its colleagues have to provide more intelligence, smarter data and together with IRENA guide people and their governments around the world to do the right things.

There is no need for us to become a huge organization. But in order for us to deliver on our promise we need to strongly increase our membership base and our flow of income without loosing our independence.

Continuing what we already are doing and following the above recom-

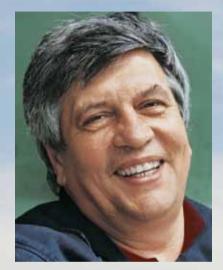
mendations I have no doubt that we together will be able to accomplish this ambitious task. WWEA will be the leading Renewable Energy Association.











"Humanity stands on the threshold of an era of unprecedented opportunities. In the past decades, many innovative new technologies have become available and affordable that can transform our current economies based on polluting fossil fuels into sustainable renewable energy economies. This transformation will provide millions of new jobs. It will halt global warming. It will create a more fair and just world. It will clean our environment and make our lives healthier."

Dr. Hermann Scheer (29 April 1944 - 14 October 2010)



Uniting the World of Wind Energy Since 2001

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