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# How IRENA is reshaping the global energy architecture

| By Thijs Van de Graaf

**Though it has gone largely unnoticed, the signing of a partnership agreement between the "traditional" energy agency IEA and the new renewable energy agency IRENA last January is a milestone event. With the agreement, the organizations seem ready to overcome the deep distrust that characterized their relationship when IRENA was created three years ago. In an article written for EER, researcher Thijs Van de Graaf retraces the origins and stormy beginnings of IRENA and analyzes the future impact the new agency may have on the international energy scene.**

There's a new kid on the block in global energy governance. The International Atomic Energy Agency (IAEA), the UN's nuclear watchdog, founded in 1957, and the International Energy Agency (IEA), the club of industrialized oil consumers, set up in 1974, have recently been joined by IRENA, the International Renewable Energy Agency.

Established in January 2009 to promote renewable energy worldwide, it already comprises 89 member states from across the globe. An additional 68 states have applied for membership or have signed its statute. The emergence of IRENA evokes a number of questions. For example, why is this new renewables agency headquartered in the desert of Abu Dhabi, the capital of the United Arab Emirates (UAE), OPEC member and one of the world's largest oil producers? Why did Hermann Scheer, who pioneered IRENA, fail to secure the post of first director-general? Why has China, the world's largest manufacturer of wind turbines and solar panels, not joined the new international renewables agency?



Adnan Z. Amin, Director General of the International Renewable Energy Agency (photo: ArabianBusiness.com)

The most puzzling question probably concerns IRENA's relationship to the IEA. The driving states behind IRENA's creation - Germany, Denmark and Spain - are all founding members of the IEA, which itself has been working on renewables for almost three decades. Instead of expanding the IEA's renewable energy unit, however, Germany and its partners decided to create a wholly new organization from scratch, with its own staff and headquarters. Why were these countries willing to pay the significant start-up costs involved in such a decision, particularly if the IEA could be retooled to take on the same tasks that IRENA is performing now?

To answer these questions, it is useful to take a step back and look at how this renewables agency came about. Fortunately, the story of IRENA's genesis is not a boring institutional chronicle, but has many of the ingredients of a good thriller novel: a mythic hero and his tragic death, phone bugs, organizational turf wars, and diplomatic campaigns backed by large amounts of cash.

## The Solar King

IRENA was the brainchild of the late German politician Hermann Scheer. Because of his relentless and passionate advocacy for renewable energy, Scheer has obtained an almost legendary status in some circles. Because of his enthusiasm for solar power, he has been called the "solar king", the "sun god", and the "solar crusader".

Scheer was a member of the Social Democratic Party (SPD) in Germany and held a seat in the German Parliament, the Bundestag, from 1980 until his unexpected death in October 2010. He was president of two environmental NGOs that have long campaigned for IRENA: the European Association for Renewable Energies (Eurosolar), and the World Council for Renewable Energy (WCRE).

Together with Hans-Josef Fell, a member of parliament for the German Green Party (Bündnis 90/Die Grünen), Scheer was able to introduce a commitment to launch IRENA in the 2002 coalition agreement under Gerhard Schröder's second chancellorship. However, both at the 2002 World Summit on Sustainable Development in Johannesburg and at the 2004 Renewables Conference in Bonn, Germany failed to muster sufficient diplomatic support for the establishment of IRENA.

Still, Scheer's drive to create IRENA did not abate. The intention to establish IRENA was re-affirmed in the 2005

coalition agreement of the first Merkel government. Having learned from the Johannesburg and Bonn failures, the German government shifted its strategy and initiated a series of bilateral talks with governments all over the world to get their support in establishing IRENA. Two preparatory conferences were held in Germany and Spain in 2008. IRENA was finally established on January 26, 2009.

### Institutional blindness

The creation of IRENA as a standalone organization was met with great wariness in Paris, at the IEA's headquarters. Top IEA officials had tried to prevent IRENA's creation before it was established. Needless to say, they were not pleased when some of their member states created another international organization on what they saw as the IEA's turf.

The German-led renewables coalition circumvented the IEA for both practical and ideological reasons. On the practical side, there were some clear obstacles to an enhanced role of the IEA in renewables: the fact that the IEA's activities are largely limited to the OECD countries, that its renewable energy work is underfinanced and understaffed, and that it does not have a wide expertise in training, capacity-building and technical assistance toward developing countries.

But these practical obstacles could easily have been overcome. For example, IRENA could have been nested within the IEA in the same way as the International Partnership on Energy Efficiency Cooperation (IPEEC) had been. Set up by the G8 and its emerging partners around the same period as IRENA, IPEEC promotes best practices in energy efficiency policy. Its secretariat is located at the IEA's headquarters in Paris, allowing its staff to draw on the IEA's expertise, but it has a much broader membership. Alternatively, the IEA's existing renewable energy unit could have been upgraded and accorded more human and financial resources.

**Simply put, Berlin was convinced that the IEA acted primarily as a lobby group for the fossil fuel and nuclear industries**

The fact that these paths were not taken suggests that the real reason for establishing IRENA as a standalone organization was not just a matter of practical considerations, but had to do with something else. Indeed, in an [official document](#) published in 2008, the German government made explicit the underlying motivation for not building on the existing IEA structure. It argued that the existing "political structures often put renewable energy at a disadvantage compared to other energy sources."

Simply put, Berlin was convinced that the IEA acted primarily as a lobby group for the fossil fuel and nuclear industries and, hence, could not provide the visionary leadership on renewables that Germany and others sought.

This perception was reinforced by a [2009 report](#) of the Energy Watch Group (EWG), an international coalition of politicians and scientists headquartered in Germany. In its report, the EWG accused the IEA in 2009 of blocking a global switch to renewables. It pointed out that, in 1998, the IEA had predicted that global wind electricity generation would total 47.7 gigawatt by 2020. This target was already reached in 2004, sixteen years earlier than predicted. In 2002, the IEA revised its estimate to 104 gigawatt by 2020, a capacity that was exceeded by the summer of 2008.

To Rudolf Rechsteiner, a member of the Swiss parliament and author of the report, these projections showed that the IEA was suffering from "institutional blindness" on renewable energy. In a similar vein, Hermann Scheer concluded in his book [Energy Autonomy](#), that the IEA "leaves no stone unturned when it comes to emphasizing the long-term indispensability of nuclear and fossil energy."

### German disappointments

In order to overcome what Scheer referred to as the "mental hurdles" at the IEA (and elsewhere), Germany therefore chose to work through a new independent international organization. However, in spite of its pioneering role, Germany, one of the world's largest producers of renewable energy, would soon suffer some major diplomatic setbacks.

The disappointments came at a meeting of IRENA's Preparatory Commission in June 2009, when it was decided that the Secretariat would be located in Masdar City, the [prestigious low-carbon project](#) under construction in the desert of Abu Dhabi. Once finished, this city will rely entirely on solar power and other renewable energy sources, with a zero-carbon and zero-waste ecology. At the same meeting in June 2009, a French official, H el ene Pelosse, was elected as interim Director-General.

The choices for Masdar and Pelosse were clearly a disappointment for Germany. Scheer had hoped that Bonn, which already hosts the secretariat of the UN Framework Convention on Climate Change (UNFCCC), would become the host for IRENA's headquarters and that he himself would be nominated to become IRENA's first

Director-General. However, the German government had not nominated him because it feared his candidacy would interfere with Bonn's application to host IRENA. This was obviously a miscalculation. In the end Germany got neither the Secretariat nor the Directorate.

**The choice for Abu Dhabi as the headquarters' location was the result of an impressive "checkbook diplomacy" campaign that the UAE had set up**

Some critics suspected France of trying to win the top job inside the renewables organization so that it could move IRENA toward promoting all low-carbon technologies, including nuclear energy. French companies have of course built up very strong positions globally in the nuclear industry, while Germany is following a nuclear phase-out policy. These fears later proved groundless, as Pelosse publicly distanced herself from nuclear energy.

To sugar the pill, the other two candidate cities to host the Secretariat were given a consolation price: Bonn would host IRENA's Centre of Innovation and Technology and Vienna would become the Agency's Liaison Office for cooperation with other international organizations.

The choice for Abu Dhabi as the headquarters' location was the result of an impressive "checkbook diplomacy" campaign that the UAE had set up, especially toward African countries. The UAE promised to invest massively in IRENA. While Germany only offered some \$11 million, the UAE offered no less than \$136 million over the first six years. In addition, the UAE pledged to cover the entire costs for the logistics of the new agency so that member states' contributions could be directly used for the payment of salaries and the financing of concrete projects.

The Abu Dhabi Fund for Development promised another \$50 million each year, for the first seven years, to finance IRENA projects in developing countries. These funds will be provided in the form of soft loans and used solely to finance renewable energy projects in developing nations that are recommended or endorsed by IRENA.

### Exit Pelosse

The first two years after the signing of IRENA's treaty were very turbulent. Less than 18 months after being elected as interim director-general, on October 19, 2010, H el ene Pelosse stepped down. In an interview, Pelosse accused the UAE of "wanting her head" and pressurizing the French government to persuade her to resign. She said that one of the reasons was that she made gender parity a high priority at the new agency. She publicly accused the UAE government of intimidation by intruding into her home, bugging her phone and office, and searching her baggage.



*IRENA was the brainchild of the late German politician Hermann 'Solar King' Scheer (photo: DBT/studio kohlmeier)*

Just a few days before Pelosse's resignation, Hermann Scheer passed away after suffering a heart attack. In some interviews right before his death, Scheer had defended Pelosse and stated that IRENA's administrative committee - a body mandated to help set up the agency - had obstructed her in her work and restricted her actions. However, an anonymous member of IRENA's administrative committee rebuked these accusations and said that Pelosse had made several missteps, such as putting on the website that she is against carbon capture and storage as well as against nuclear energy.

Some member states, including the US, were also dissatisfied with what they saw as the "financial mismanagement" by Pelosse and her failure to put into practice "good accounting standards". As a result, they

withheld the financial support they had promised. Among these countries, the US (which had promised about \$3 million) and Japan (which had promised \$2.2 million) stood out as the largest defaulters. In January 2010, the administrative committee had drawn up a budget of \$14 million, but by June only about \$5 million had been paid. The agency had to downsize its programs and freeze all expenditures in June 2010. Eventually, these budgetary problems were resolved, largely because the UAE stepped in with a large amount of additional cash. In October 2010, a new interim Director-General was appointed, Adnan Amin from Kenya, with broad support from the membership.

### Growing momentum

Today, as mentioned, an impressive total of 157 states have signed IRENA's treaty. Nevertheless, initially, IRENA failed to mobilize support from some key countries. Conspicuously absent from the 75 original signatories were G8 countries Canada, Japan, Russia, the United Kingdom, and the US; and global leaders from the South such as Brazil, China, India, Mexico and South Africa. There was a clear risk that Germany, Denmark and Spain would be saddled with a flock of developing countries that were mainly interested in technology transfer and financial

support.

It was only after a while that many industrialized and emerging countries decided to join anyway, for various reasons and with different expectations. Today, 25 out of 28 IEA member countries have signed onto IRENA's statute while at least one more, Belgium, is preparing its entry. The two remaining IEA countries that have not yet joined IRENA are Canada and Hungary, although it is clear that within both countries political forces exist that are supportive of IRENA.

For the United States, one of the staunchest defenders of the IEA (an organization that was created at the initiative of the US in the 1970s), the reasons for joining IRENA were very much related to domestic politics. The United States was never in favor of creating IRENA, which it saw as the product of zealous European political posturing. When it was clear that IRENA was going to be created anyway, Washington was faced with a fait accompli and decided it might as well join the new agency. In any case, it was a fairly inexpensive way for President Obama to demonstrate a different approach to lower carbon politics than his predecessor George Bush had shown.

***The United States was never in favor of creating IRENA, which it saw as the product of zealous European political posturing***

Today, the most remarkable remaining absentees from IRENA are China, Brazil, Russia, and Venezuela. Especially China's absence stands out, since this country has recently catapulted itself to the top ranks in the global renewable energy industry. Yet, this may also be an explanation for its absence: since they are already doing well, why would they need to join IRENA? In addition, China may have taken a more cautious approach toward IRENA in the wake of the agency's early budget and leadership problems. And while China may not lack money, it does lack domestic human resources capacity to manage its membership in these international institutions.

### From booster-clubs to partners

So what can we expect from IRENA in future? Will the Agency acquire real teeth, or will it evolve into a mere talkshop and cheerleader for renewables? At the moment IRENA still looks like a toothless tiger: it has a modest budget, no clearly defined functions, and its adoption of UN consensus rules will probably prevent it from playing a strong role in global energy and climate politics. The creation of IRENA may thus remain no more than a symbolic action, taken for internal German political reasons, with a headquarters in Abu Dhabi for reasons of prestige.

Even so, the creation of IRENA is not without significance. It is the first truly international organization that is hosted in the Middle East, the first international institution created under German leadership, and the first international organization that the US has joined in fifteen years.

More importantly, the coming of IRENA is already reshaping the global energy architecture. Granted, the existence of a specialized renewable energy agency raises the specter of (further) institutional fragmentation in global energy governance along sectoral lines, with each sector having its own international institution. It is well known that sectoral institutions are captive to their constituencies and tend to acquire a "booster-club mentality". Every sectoral grouping thus tends to defend "its" fuel of choice. IRENA could become no less guilty of this dynamic than the IEA or the IAEA. Indeed, the countries that were most eager to establish IRENA might well have been motivated to advance the interests of the strong renewable energy sectors they host.

Yet, at the same time, IRENA is clearly having an impact on the existing organizations, in particular the IEA. There are clear signs that the IEA's attitude towards renewables has changed in response to IRENA's creation. In September 2008, the IEA upgraded its renewable energy unit into a division, staffed by 9 full-time analysts, as a

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sign that the agency is aware of the urgent need to accelerate the large-scale diffusion of renewable energy technologies to reduce CO<sub>2</sub> emissions. In addition, the IEA has expressed itself unusually positive about solar energy in two recent reports

published in mid-2010. It predicted that concentrated solar power and photovoltaic solar power could supply up to a quarter of global power production in 2050, which was much more than the IEA had ever envisioned in any of its scenarios in its annual World Energy Outlook.

In February, the IEA announced that it would henceforth start issuing annual "medium-term reports" on renewable energy. The Agency has been doing this for oil, gas and coal for years. The IEA underscored in its press release that this new activity shows that "renewable energy takes its rightful seat at the table alongside the other major energy sources." It said it wanted "to acknowledge the coming of age of the renewable energy sector" and stressed that it is already "in contact with over 100 companies and organizations which are sourcing detailed market, cost and performance insights on renewable energy technologies."

## Great expectations

But the most important sign of change is the announcement in January of this year of a partnership agreement between the IEA and IRENA. The new agreement, still in the form of a letter of intent, paves the way for closer collaboration between the two institutions on issues like data collection and the organization of joint conferences. The flagship of the new agreement is a joint database on renewable energy policies, which is freely accessible online. The database builds on an existing IEA database, but extends its data coverage to include IRENA member countries. Thus it illustrates the added benefits cooperation between the two institutions can bring.

At this moment, it remains to be seen how this new partnership will develop. The IEA and IRENA now face the task of translating the letter of intent into concrete and tangible changes. What is clear in any case is that IRENA has matured and, with the seasoned UN official Amin at the helm, restored some confidence among its member states. The IEA, as we have seen, has changed, too, and seems to have become more open to the potential for renewables to contribute to the world's energy mix.

The latest move raises "great expectations" (to put it in terms suitable to this Dickens year) that the two institutions will work cooperatively rather than merely duplicate each other's efforts. Given the sheer magnitude of the challenges surrounding the transition to lower-carbon options, the world certainly needs institutional collaboration more than parochial turf wars.

### About the author

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**Note: In a recent interview with EER, Executive Director of the IEA Maria van der Hoeven discusses her views on the future of the IEA and the new partnership with IRENA. You can read the interview by clicking [here](#).**

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### Contributions

Your comment is noted, Mike Parr.

Please state the exact time intervals during which the 2MW wind generation supplied power to this rural load so that we can get away from the obtuse averages (30%) which you seem intend on pushing. Some of us know a lot better than to trust averages where wind and solarPV generation is concerned. What matters is WHEN it generates.

Then, when the 2MW was actually generating, how much went locally and how much was lost [cables volt-drop (inductive and capacitive) and cables heating losses] on supplying upstream to the National Grid?

What will you do if the electricity users do not want the electricity when the 2MW wind decides to generate?

Answer these simple questions without stuttering and I might start to believe you have an argument.

How much electrical energy (kW-h) did the 2MW turbines take from the National Grid when not generating?

So, really, what did your "analysis" achieve?

#### *Norfolk Dumpling*

Been analysing data from a (rural) primary substation in the UK. It has 2MW of wind connected to it which over a year provides around 30% of the load on the line. The value of the wind energy produced @ wholesale+ROC is around £500k. The value of the energy at retail is £600k. In principle there is no reason why the energy could not be sold directly @ retail to those connected to that (11kV) line thus avoiding the need for subsidy. Indeed, there is no reason why "community energy schemes" where people connected to a line owned the generation resources on the line. Have a couple of projects running addressing volt variation in such circumstances - & have good results. Thus at a local level, RES can probably stand on its own two feet.

I'm interested to see that the other commentators seem to be in the gas (or would

that be gassing) business.

*Mike Parr*

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Well said, Norfolk dumpling.

The world needs another International bureaucratic boondoggle like a hole in the head. Clearly the IEA could have done this, albeit without the German's holding the whip hand.

It was convenient that no one mentioned that the Persian Gulf states are pursuing nuclear power as quickly as they can get the appropriate approvals in place.

Merkel's anti-nuclear stance is strictly political, both to the greens and to German's significant government-subsidized and promoted alternative energy industrial sector.

If Denmark and Germany didn't have backup power from Scandinavian hydro and German coal to draw on when the wind doesn't blow (wind turbines are only productive ~ 20% of the time) German industry and the public would have more "brown outs" than imaginable.

*Mt. Math*

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Thanks for an illuminating article.

1. It is worth remembering that Hermann "solarking" Scheer was yet another politically oriented economist/lawyer/political "scientist", and one wonders whether he was capable of working out the figures regarding "renewables".
2. Whilst Hans-Josef Fell graduated in 'physics and sports science', one must question his science of the real world; leading light of the German Green party says a lot.

Do we really need all these "international" NGOs to advocate "renewables"? Carbon dioxide is the chemical and food of life and we will not be able to "grow" the world's agriculture and water to feed the world's 6.5 billion inhabitants until we accept a norm of 1,100-1,200 ppmv in our atmosphere.

So the "low-carbon" agenda of so many political castes is actually the route to destroying our world especially with organisations like IEA and IRENA advocating exploitation of renewables to "save the planet".

You wrote "...visionary leadership on renewables that Germany and others sought." We only have to consider the technically illiterate knee-jerk reaction of Angela Merkel to nuclear power to begin to realise that German politicians cannot work out the numbers or see the real picture created for "renewables".

Probably also true in Denmark and Spain. [Which economies are falling apart?]

"Visionary leadership" for renewables has been given by technically literate scientists, engineers and entrepreneurs since the beginning of the Industrial Revolution in the 1700s. As soon as demandable, transportable and controllable fuels became available, stochastically intermittent and erratic "renewables" [wind and water] were, quite rightly, ditched to be replaced by secure energy sources which benefitted the whole community irrespective of the individuals community status. One only has to compare the recoverable energy densities of the different fuels to realise, in a flash of real world wisdom, why this happened.

And yet the political laymen (invariably "ably" technologically qualified in politics, philosophy, economics, history, political science) still push "renewables" giving away vast amounts of community hard-earned tax cash for virtually nil return instead of investing it in energy sources/R&D such as coal, gas and nuclear for the full secure benefit of all mankind.

Perhaps the one differentiating factor between properly exploitable fuels is that we can transport gas, coal or nuclear fuels to anywhere in the world, whereas with renewables you have to be in the right place at the right time with no hope in hell of transporting large quantities afar for what it may sometimes produce.

Do we really need more layers of bureaucratic tax-payer funded NGOs [IEA + IRENA to advocate the way ahead? Or should we leave that to the scientists, technologists, engineers and entrepreneurs who know how to safely exploit, environmentally AND economically, the planet's resources?

The world seems full of well-paid commentating experts [generally economists? and the media? and academic institutions?] and organisations but surprisingly empty of real wealth creators.

*Norfolk Dumpling*

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When you consider the amount of steel used in the construction of wind turbines and the amount of concrete used in their installation, how can they possibly be green? Their capacity factor is so pathetic that the use of these resources, per kWh generated is 54X greater than the equivalent amount of energy from a breeder reactor: <http://ftrsuk.blogspot.co.uk/2012/03/energy-revolution-policy-to-ruin-planet.html>

And we all know that breeder reactors are the inevitable and only answer to future CO2-free base-load supply. We just need to decide which type we want: <http://ftrsuk.blogspot.co.uk/2012/03/breeder-reactors-it-is-but-will-it-be.html>

*Colin Megson*

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Re Professor Rust's comments, I could not have put it better! Having helped write the Institution of Mechanical Engineer's response to the UK DECC consultation on the banding levels for the Renewables Obligation for 2013 to 2017 [http://www.imeche.org/knowledge/policy/public-affairs/Consultation\\_Responses](http://www.imeche.org/knowledge/policy/public-affairs/Consultation_Responses) we found that both onshore wind and offshore wind is underperforming by up to 10% and 18% respectively. You would not want to buy a car or a boiler that did not perform as stated, so we should not pay for wind, especially offshore, and other renewables that are not performing as stated! A coal fired or nuclear power station contract will have severe penalties if guaranteed output is not achieved - something a windfarm can not be asked for.

Let's get the facts out into the open.  
Michael Knowles CEng MIMechE Cheltenham

*Michael Knowles CEng MIMechE Cheltenham*

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Mr Rust forgets that CO2 is the real problem, not the price nor the scarcity of fossile fuel.

Furthermore is this story incorrect in that nuclear power also produces CO2. The amount of CO2 from nuclear power increases with the % of uranium in uranium ore. This is getting lower and lower.

Now, the CO2 production from nuclear power is about 30% of that of a natural gas power plant, but scientists expect that it will grow beyond thjat of a coal fired power plant between 2040 and 2080.

Nuclear power will end with a negative energy balance, when it will cost more energy to produce nuclear fuel, than that fuel will deliver in a nuclear power plant

<http://www.stormsmith.nl>

*Henk Daalder Windpark Wiki*

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There is considerable amount of solar and wind power generation spread around the world. Why not provide performance data such as capacity factors, maintenance requirements, reliability, safety, cost of construction, operating costs, insurance costs, practicality of merging with conventional power systems, length of time a unit can stay in service, etc.

In North America there is plenty of inexpensive fossil fuels for power generation and it seems irresponsible to saddle their inhabitants with high energy costs that damage the life of the poor when such sacrifices are not necessary.

James Rust, Professor

*Dr. James H. Rust*