

6th European Grid Conference – Minutes

Brussels, 29 September 2016

Welcome/ Introduction

Antonella Battaglini, RGI

RGI's CEO Antonella Battaglini opened the conference by reminding the audience that the energy system has gone through an incredible transformation. We are seeing renewables growth combined with an incredible cost reduction. In addition, we see massive developments in storage, which, together with demand side management, are most likely going to bring the next big disruption. Finally, we are getting increasingly better at reforming the markets.

However, Antonella showed that there is a lot left to work on. RGI, for example, has done much to promote the value of nature, but of course nobody has a silver bullet that fixes all remaining issues. That is why she thinks that we constantly need to learn from each other. RGI is always trying to facilitate this learning, for example during a most recent trip to New York and California, where we brought together European and American energy experts. RGI also actively shares best practices and was honoured to have the annual 'Good Practice of the Year' award at the European Commission's Energy Infrastructure Forum.

Antonella finished her welcome words by saying that this 6th European Grid Conference will have a special focus on sustainable power grid development, in particular with a view to engaging citizens better and looking at those members of society who might have trouble paying their increasing power bill. While the industry has benefited from decreasing electricity (wholesale) prices, bills for households have been going up. However, Antonella stated that we cannot go very far if we do not have the support of the people and thus, it is a problem if we leave people out of the transition and have groups that have to pay more without reaping any of the benefits.

Keynote 1: “Vision of a sustainable Energy Union”

Maroš Šefčovič, Vice-President of the European Commission

Vice-President Šefčovič opened his speech by demanding that we need more enthusiasm for energy and can only achieve this by being honest to people, speaking with them and showing them the benefits of cooperation. In his opinion, the main challenge we are facing in all EU countries is to get public support since globalisation makes many people feel as if they are in a position of insecurity. He signalled that there are also positive developments as seen with the Paris agreement.

Šefčovič believes that we cannot talk about energy without talking about climate change. However, the EU won't be able to hit the Paris agreement targets if we do not focus on sustainability and innovation. One concern stated by many is that this will be expensive and cost many jobs. So, the Commission thinks that we need to develop a different story collectively. In the renewables sector we already have nine million employees today and expect to have another nine million by 2030.

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Šeščovič explained that the Energy Union was the most important building bloc to achieving these goals. This includes the Commission’s new proposition for the ETS and better energy security, in particular for Eastern European countries. The Commission is also working on these current questions: How can we decarbonise the transport sector? What can be done with public transport and trucks? How can we compete with those companies who already work very committedly on the car of the future? How can we make our buildings smart? One of the answers is: We need to build the infrastructure for the 21st century economy, including charging stations for electric cars.

The Vice-President pointed out that we need the support of citizens. Otherwise, the overall process that is required for a successful energy transition is blocked and tainted by a negative atmosphere. With regard to grid development this means that we need to try to have the public understand the need first, and ideally they even have the feeling that they are shareholders of the infrastructure. Aside from understanding the need, energy poverty is still a very real confinement for public support. There are still many people in Europe who are struggling to pay their energy bills. He concluded that the Commission would do their best to move forward on all these issues.

Grid investments and the social dimension

Keynote 2: “Grid investments and the social dimension”

Joseph P. Kennedy II, President Citizens Energy (video) + CEO Peter F. Smith keynote

Joseph P. Kennedy II:

Mr. Kennedy started his speech by pointing out that climate change was a terrible threat to everyone on our planet. The only way that we would get on top of that problem was by decreasing our dependence on fossil fuels and increasing our dependence on renewables. However, he said that people got very angry when they felt that there was a big energy initiative coming to their part of the country and pushed back by saying there was nothing in it for them. Someone else was reaping all the benefits and making a lot of money out of the new infrastructure that had to be built to integrate renewables. Mr. Kennedy explained that Citizens Energy took that criticism to heart and created a non-profit energy company – all profits that were made should ultimately go towards helping low-income households. For that reason, they were now able to build the biggest new power lines in America because the people in the concerned areas knew that the profits went to helping people in need. So, instead of fighting them, they had become their allies in achieving the changes they were targeting.

Peter F. Smith:

The idea for the ‘Citizens Energy Corporation’, the company started by Joseph Kennedy, evolved gradually over many decades. In the early 70s, Kennedy decided to use oil trading to help those who were in most financial trouble after the oil shocks and could not even pay their heating bills. Since then, Kennedy has been dedicated to do his part with regard to “figuring out how to survive in this green and blue spaceships of ours – and help low income families”. Back then, he would use the profit from trading to reduce the cost of heating – a new approach to use market mechanisms. He then moved on to the subject of electricity trading and ultimately succeeded in convincing the government to allow non-utilities to trade wholesale electricity. In recent years, Citizens Energy has mainly focussed on the Imperial Valley, one of the most economically disadvantaged

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areas in California. Heat related deaths started to grow and Kennedy looked into participating in the development of new high-voltage transmission lines, using the profits to support low-income families, which ultimately also helped with the acceptance of the new infrastructure.

In 2004, Citizens Energy started engaging in building the first new 500 kv power line built in California in a very long time. They ultimately invested USD 100 million in the line for the rights to 50 per cent of the transmission capacity in the Imperial County. They turned that capacity over to the regional grid operator and earned a federally regulated rate-of-return on their investment. Since the line became operational in 2012, Citizens Energy has provided over 500 free residential solar-rooftop installations through the Citizens Solar Homes Programme. The programme cuts each low-income household's electricity costs by up to 50 per cent per year, freeing up income for other basic necessities like food and medicine in California's poorest county. The rooftop solar systems are funded through a 20-year pre-paid lease, ensuring that the homeowners will have no financial obligations, like maintenance and equipment replacement, during the entire lease.

Citizens Energy is now working on expanding their successful business model to other projects and finding new partners, such as PG&E and National Grid. They have also become active in wind development, a project for which they have partnered up with Native American tribes.

Moderated dialogue between Peter F. Smith and Maroš Šefčovič:

The discussion first evolved around whether Citizens Energy's approach towards grid investment could also be stimulated in Europe. Vice-President Šefčovič pointed to the fact that investments in the energy sector are still struggling to get back to pre-financial-crisis levels because many people are still afraid of the crisis coming back. But he also mentioned that whole sale prices are so low that you almost have no profit. Additionally, there have been several circumstances in Europe where the support system for renewables has been changed retroactively – a fact that has also shaken investor confidence. On the other hand, cooperatives like e.g. in Germany which are producing more and more energy themselves make him feel hopeful. “These green participatory suburbs attract people. We know the ingredients, but we need to work together to make it happen”, he concluded. He added that the possibility of people having co-ownership of the grid could also be an interesting approach to acceptability. “The challenge would be to find a one-size fits all. But we should try.”

Peter Smith again emphasised the acceptance benefits for grids operators when partnering up with an organisation like Citizens Energy. He also reacted to audience concerns with regard to using the profits to support the local population, saying that this would not set a precedent for the TSO as profit being used for support is only that of Citizens Energy not that of the TSO. Peter also stressed that the most important thing in an endeavour like this – much more important than legislative changes – is having willing partners who figure out together how the project can work and think creatively, how you can make it work within the existing rules.

Commissioner Šefčovič closed the session by reminding the audience that the biggest difference between the United States and Europe is that we consider innovation under expenditures whereas in the US it is seen as an investment. “And expenditures are

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always cut first”, he said. “Let’s try to find a solution how to treat innovation as investment and get public acceptance by sharing some of the profits.”

Presentation and panel discussion: “Different practices for payments to communities affected by new grids”

Rosemary Steen, EirGrid; Riccardo Vailati, Autorità per l’energia elettrica (Italian Regulatory Authority); Edoardo Zanchini, Legambiente; Gerald Kaendler, Amprion; moderated by Theresa Schneider, RGI

RGI’s Theresa Schneider briefly presented RGI’s current work stream on community payments. The definition we work with is that community payments for grid infrastructure are payments made by the TSO to provide a direct benefit to communities in the vicinity of new or upgraded high voltage electricity lines. The topic is high on RGI’s agenda because one of the most relevant grid acceptance challenges is a justified grievance concerning a lack of local benefit. RGI is looking to identify and promote innovative ways of providing this local benefit. More on RGI’s work on the topic can be found in our [‘Community Payments’ brochure](#).

The following panel started off with a discussion on how to draw a line between community payments and bribery. The panel agreed that the most important thing was that a community does not feel as though they have actually been paid off for a bad thing, but rather really have gained something from the deal, such as a new playground that citizens might have wished for for a long time. You have to know your audience and you have to structure your approach accordingly and in accordance with the regulatory framework. EirGrid, for example, does compensate communities with payments, but always makes sure that the payments are received in a way that most benefits the community – some wish for direct payments others prefer other types of investment. It is always important to know the social territory and to get the chemistry right before you make a decision. This requires a significant commitment from the TSO. Engaging with stakeholders and being seen by them as trying to make a reasonable informed decision helps a lot.

The regulators’ perspective on the topic is that, especially with the concerning figures with regard to delayed PCIs, public opposition is a very relevant concern because it prevents the timely build-up of needed grids. However, they call for resilient figures that prove the positive impact of a community payment approach and the possible time savings before they want to start discussions about more financial leeway for TSOs in this regard.

From the NGO perspective, the practice of community payments is seen as legitimate and potentially helpful as long as it is handled transparently and people are aware what the money is used for as opposed to it disappearing in government channels. People must see a specific advantage for the local community.

The panel then talked about whether there was enough trust between regulators and TSOs and TSOs should be granted more flexibility. The TSO representatives agreed that projects could be delivered more efficiently if they were to have more flexibility. However, they also suggested to not only shove away responsibility to the regulators, but instead be aware of what they themselves can do. One suggestion was that European TSOs

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figure out collectively, and also with the help of other stakeholders, what best practices in community payments could look like. Once there were sound concepts, these could be brought to the regulators and they might agree to bend the current rules based on a convincing outlook.

In closing most panellists agreed that it was important that politicians at EU level were aware of what's happening in the different countries and put in place a fitting framework.

Innovative practices: sustainability and the power grid

Pitches of good practices

1. Marco Nix, 50Hertz

Marco Nix explained in his presentation that the transport task for grid operators was constantly increasing. In Germany, load centres are in the South and huge renewables production centres in the windy North, which requires grid development as it is the most effective and efficient way to integrate renewables. However, Nix explained that you could not extend the grid endlessly since there were social costs attached. That is why we also need to qualify renewables for ancillary services and consider storage once there are more than two thirds of renewables in the system. For that reason, 50Hertz is not only looking at the build up of grids, but also supports the development of a market design that rewards flexibility and helps renewables integration. 50Hertz engages in implementing new technologies, such as those that foster digitalisation, developing a major role for renewables in ancillary services (e.g. balancing power) as well as supporting a single European electricity market that helps renewables integration by market coupling and almost spend nine million Euros last year on the development of these solutions.

50Hertz also believes that for the transport task ahead we need a stable long-term relationship with shareholders. To that end, they are looking towards the sustainability goals specified under the ESG framework (stands for environmental, social, governance) and have managed to increase their transparency and consolidation of activities accordingly.

And lastly, 50Hertz is concerned with global climate protection and local nature protection. Nix showed that the most efficient way to go about this is certainly to put money on the table, but 50Hertz likes to be more involved and engage with people on the ground. They have created an entire portfolio of ecological compensation measures that include individual measures, eco pools and compensation payments. Very recently, 50Hertz also made their commitment to the energy transition visible in their new corporate headquarters, which fulfils highest energy standards and with its open space philosophy stands for communication, collaboration and efficiency.

2. Luca Marchisio, Terna

In the last three years, Terna has developed a study on the impact of power lines on birds' migratory routes through radar in Sicily and Calabria. They monitored over 100,000 birds and have not found any proof of raptors hitting power lines line. However, they have gained many other interesting insights, e.g. out of 5000 raptors only 15 came near the

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cable and had to quickly change their flight route in order to not hit the cable. Terna has now decided to create more value from the data collected and make it broadly available.

A second example of Terna's sustainability activities is the 'Smart Islands' project. Currently, the electric demand of some of the islands serviced by Terna is solely supplied by diesel generators. This means that usually the system has a bad environmental impact. Therefore, Terna is now working on replacing the generators with renewables by investing in storage, active demand systems and e-mobility (to contribute to the balance of the system). On a small scale, they are thus designing and building what should, on a large scale, be the energy system of the future.

And, finally, Luca Marchisio shared some remarks on the general role of TSOs in the future. In the future he thinks that they would need to be able to manage huge amounts of distributed resources. In a world fully relying on renewables there would be zero marginal costs and no more new capacity would be build. He said that TSOs needed to start acting now and allow renewables to participate in ancillary services and we needed to look at 15-minute and one-minute ahead markets. The role of TSOs was key in promoting and managing a sustainable and fully conscious evolution of the energy system and Terna was becoming much more conscience of these challenges.

3. Timm Krägenow, TenneT

Timm Krägenow presented the mid-term and long-term offshore future developments at TenneT. In the Netherlands, TenneT has just been appointed as the offshore grid operator and they will need to build a lot more wind power plants than currently foreseen in order to fulfil the Paris agreement. The challenges they currently have to face are how to make offshore wind power more cost efficient and less environmentally impactful as well as how to best integrate it into the energy system.

TenneT's solution to these challenges is the development of a hub and spoke system, an island that will allow them to use onshore technology in an offshore project. This island could be made of sand or stone, or even be a floating island, depending on where it would be located. TenneT is convinced that this approach is much more cost effective than other solutions because they already have a lot of experience with onshore technology and do not need to learn anything from scratch. Additionally, this approach gives them the chance to place the island far offshore, which means that you will have much stronger winds and will create a better return of investments in the end.

This island could be connected to several different countries and the cables to connect the island can then automatically also serve as interconnectors between the countries. TenneT is currently reaching out to other countries, companies and stakeholders to not only think in national schemes, but to start thinking about what it means to work on an international infrastructure project in the North Sea together to make sure that wind power becomes as cheap as possible. Krägenow concued that the willingness of all countries as well as a robust framework, so that wind developers have some security, will be needed in order for the project to become successful.

TenneT has also already talked to Greenpeace and other NGOs about the idea and conducted a rough environmental impact study. They will remain in close contact with the NGOs to make sure that they have everyone on board.

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4. Ilse Tant, Elia

Currently, Elia is restructuring the company to make sure it does all it can to make the energy transition happen. Ilse Tant explained that their grid projects did not fail or get delayed because they were bad engineers, but because they did not identify the main acceptance issues. So Elia decided to restructure the company around exactly that issue.

They developed a strategy around six building blocks:

- 1) innovation and growth opportunities
- 2) deliver the infrastructure for the future
- 3) make sure the grid is running smoothly
- 4) engage in the discussion about market mechanisms and promote flexibility
- 5) collaborate on European level, with TSOs, DSOs and NGOs
- 6) align company culture with strategy

The mandate of everything Elia does comes from society, so they have to make sure that the decisions are supported, which is why from now on Elia will work around the central question of what is publicly acceptable. This means that they will engage in any needed dialogue and will pursue coalition building at a very early stage. To ensure this strategy is successful they need partners, such as RGI.

So far, Elia has developed an action plan to avoid birds flying into the lines, they developed compensation strategies, and they are working on policies with regard to electro-magnetic fields and visual integration of grid lines. Together with local partners, they also try to develop green corridors under all overhead lines to avoid mechanical maintenance, which is not beneficial to most plants and species.

Concluding remarks

Konstantin Staschus, Secretary-General ENTSO-E

Konstantin Staschus started his speech by concluding that the event was a great forum to learn from each other. In his opinion, sustainability and the transmission grid were two sides of the same coin. We all knew that to enable the integration of more and more renewables we needed to invest a lot. Such a significant grid project needed strong cooperation. Mr. Staschus agreed with Vice-President Šefčovič who alluded to the need for stronger collaboration across Europe. He believes that for industry players, collaboration with civil society and NGOs is vital. And, RGI is a leader in fostering this kind of collaboration and has shown that things get easier and actually turn out better if we all act in concert.

Konstantin Staschus continued by declaring that we needed frontrunners on the issue of RES integration. He is sure that the newly defined collaboration between RGI and ENTSO-E would benefit both sides. He knows how RGI was pushing the discussion on best practices forward and is very thankful to RGI for addressing the topic of community payments. He learned during the day that clear statements on this issue would help a lot. However, the regulatory framework probably also needs to be adjusted and the regulators could support this kind of approach by making clear statements and lending support to this change rather than block it. Staschus concluded by pointing out that a lot of work was still ahead and that learning across all kind of borders is very relevant to get that work done.

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Dominique Ristori, Director General for Energy, European Commission

The Director General started his speech by saying that there are many changes afoot at the moment and electricity is a key component in many of these changes. That is why, in his opinion, we have to hurry in getting our tasks done. This includes that we have to facilitate the development of renewables generation, decarbonise the energy system and manage variability. And we need to develop the grid in order to incorporate the increasing amount of renewables, not only on the distribution side, but also on the transmission side.

But while trying to find a European consensus on how to manage these challenges, Ristori pointed out that we should also remember that we as Europe do not work in isolation and that there are other regions that face very similar challenges. Therefore, he was very comforted by the increasing level of cooperation that we were managing. He explained that the Commission had a long exchange with the president of the US American Federal Energy Regulatory Commission during a recent visit of his to Europe where they discussed the future of the electricity market and the grid, the need for enhanced regional cooperation and many other topics. He believes that all sides can profit from such an exchange of expertise.

He therefore thanked RGI for continuously building bridges between Europe and the US, with whom we have values of democracy and transparency in common. But we also needed to look elsewhere and he was delighted to see RGI's capacity to open windows in this regard.

Ristori announced that the Commission would certainly prolong the cooperation with RGI – beyond and including the next Energy Infrastructure Forum in Copenhagen. And, closed his speech and the Conference by saying how happy he was to see that RGI had initiated another wonderful cooperation with inspiring partners from America for this event.

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