Renewable Energy and Energy Efficiency
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Session 2 Panel discussion: Successful Policies for Energy Efficiency

Topic: Successful political, economic and regulatory frameworks for the promotion of energy efficiency

Excellences and distinguished participants. I speak today on behalf of COGEN Europe, representing the European cogeneration industry. We are an advocacy and trade association based in Brussels, structured round 19 national member organisations and 100 direct industry members.

For those who are new to cogeneration, cogeneration is an energy saving, low carbon technology. Cogeneration is simply the simultaneous production of heat and electricity, providing both products to an industrial process or direct to the consumer market. The traditional condensing process of fossil fuel power plants, by contrast, provides only electricity to the market and vents the heat simultaneously produced, to the environment. Currently the average generating efficiency of condensing power plants across Europe is around 40%. If grid distribution losses are taken into account the average efficiency of today's electricity supply system is 35%, fuel-to-user.

Cogeneration can double that efficiency.

Cogeneration is a mature technology. 81GWe of Europe's electricity is currently generated in cogeneration plants. In the Netherlands and Denmark cogeneration provides between 40% and 50% of the electricity. Cogeneration is fuel independent, and the industry has a strong supply chain in place to supply the equipment. COGEN Europe estimates that there is an additional economically achievable cogeneration potential of 150GWe in Europe today, translating to:

- Additional security of supply by significantly lowering fuel consumption and decentralising generation capacity
- CO2 savings of an additional 200-300 Mtonnes of CO2 per year
- A significant domestic commercial market

So what do the successful existing models suggest for developing this low carbon, efficient technology?

Four lessons learned from EU experience.

1) Lesson One: Plan for heat and electricity together
Plan and create policy for heat and electricity together, not separately. Electricity demand is only 20% of end use energy requirement, heat is over 40%. Plan for heat and give focus to policies promoting the supply of heating/cooling in conjunction with electricity. The two occur as a demand together and are supplied automatically together.

- Decide whether regulation or the market will be used to balance supply and demand
- If energy prices are regulated include all the fuel sources and electricity in the regulation.
- Have a strong independent regulator.
- If one part of the energy sector is liberalised then all sectors should be liberalised.

2) Lesson Two: Minimise uncertainty
Once investment for a new cogeneration plant is made the costs of the system are largely set. Any investor knowing this, needs predictability of pricing structure, legislation and policy frameworks going forward, to reasonably calculate an ROI justifying the original investment.
Policy must seek to create clarity, predictability and continuity over timescales which are long enough to cover the investment, and very long politically i.e. 10 years plus.

3) Lesson Three: Level the playing field
Large industrial operators of cogeneration claim that a level playing field is all they need. They are already prepared to make the investment. However: unfavourable grid access conditions; punitive terms and tariffs; uncertainty in timescale to build due to extended processes; are all deterring investment in plant in some areas of Europe today.
For new smaller cogeneration entrants the most significant elements are achieving an acceptable ROI and hence removal of uncertainty in the process of market liberalisation. The ROI is dictated by the difference between the price of electricity and the price of fuels. Experience has shown that liberalisation of the energy market in Europe has not supported cogeneration, quite the opposite. With over capacity, and largely amortised power station costs in Europe the electricity price remains low, while the primary fuel price varies. Added to this the indirect and historical subsidies still persisting in the energy market mean that there is currently no level playing field in energy pricing. Cogeneration straddles the fuel market. Cogenerators have typically no ability to switch fuels as they supply single industrial plants or small numbers of other users and are hit from both sides in the energy price

movements. Until the market is truly open cogeneration will need the encouragement of support in some sectors if it is to grow substantially.

4) Lesson Four: Plan for decentralised supply of electricity.

The highly developed cogeneration markets are characterised by decentralised supply. The majority of generating units are under 20MW in capacity. Policy has to support a more decentralised approach with many small players: single site cogenerators and Energy Service Companies. This means planning for distributed grid access and the strengthening that this can bring to the grid as a whole.

This process will drive market change, as smaller entrants are encouraged into the market, providing the disruptive influence needed to really liberalise the energy market.

Conclusion

In conclusion cogeneration is a low carbon, energy efficient technology. It cuts cost, cuts fuel demand, and cuts CO2. It meets the requirements of current energy strategy and holds a solution for much of the fossil fuel which Europe and the rest of the world will continue to burn to make electricity for the next 20 years. The industry is ready and able to support.

Policy frameworks in individual countries will decide whether cogeneration is a rapid, significant contributor, to carbon abatement and energy efficiency, or not.