

Speech in Congress
The Nexus between Water, Energy and Climate
by
Danish Minister for Trade and Investment, Ms Pia Olsen Dyhr

- I am honored and excited to be here today in the Halls of Congress to discuss three critical issues: Water, Energy and Climate.
- These three issues may constitute the most important nexus of challenges facing us now and over the next decades.
- My two main points today are the following: First, we cannot continue to deal with the challenges related to energy, climate and water individually.
- The economic and environmental impacts of these areas are interconnected and must be dealt with as such. Solutions to one may impact the other two.
- Second, key to these efforts is building strong, viable partnerships between business and the Danish government. Only through such partnerships will we be able to craft new, innovative ways to meet the challenges of climate, water and energy.

- Let me begin with energy. In the 1970s, when the oil crises hit, Denmark was almost 100% dependent on foreign energy sources.
- We were extremely vulnerable and forced to take the crises seriously. It was a matter of national survival.
- Denmark began implementing policies that would make us energy independent. With business as a partner, Danish governments of both political stripes laid out policies that led Denmark to being today:
 - the most energy efficient country in the EU;
 - energy independent and a net energy exporter;
 - having 78% economic growth over this period – comparable to other developed economies -- while energy consumption has remained flat;
 - and, not least, having companies – like those here today – that have gained a global competitive advantage by embracing these policies.
- The Danish Story is a win/win for society, government and business.

- Government is the partner that sets long term regulations that companies can count on when making investment plans and formulating strategy, and that society can count on to avoid extreme price fluctuations.
- The companies have used consistent regulations to become global leaders within their sectors benefiting society with jobs and a high standard of living.

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- Let me highlight some of the factors that have been important in Denmark's energy success story.
- In spite of the North Sea oil discovery in the 1970s, Denmark only used this oil as a short-term bridge to energy independence while at the same time we continued developing renewable solutions.
- In the mid 1980s, the Danish energy plan shifted away from centralized power plants. Every community was asked to formulate an energy plan to generate power and heat.

- This led to District Heating and Power being widely used to heat and power cities and towns of all sizes – preferably with natural gas at that time.
- With district heating and power our facilities obtain 80-90% efficiency from any energy source – even coal – compared to the approximately 40% from older US coal fired power plants. Today, we also have added cooling to the dynamic.
- In the rural areas, biomass and biogas is widely used to generate heat and electricity for local use.

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- In fact waste is recycled at an impressive rate. In Denmark 85% percent of garbage is recycled or incinerated compared to the US that only recycles or incinerates 35% of its garbage.
- Since Denmark produces power and heat from trash and reuses most of the remaining garbage, we have no need to open new landfills.
- Wind now accounts for 22% of electricity generation and by 2020 one-third of Denmark's total energy consumption will be covered by renewable energy.

- Danes also bicycle and walk – about 35% of Copenhageners bike to and from work. Bike paths are widely available and go from one end of the country to the other.
- Mass transit is reasonable, reliable and widely used.
- Energy efficiency has also greatly increased. The introduction of energy saving obligations for energy companies have been a great success.
- Denmark and the EU began phasing in energy saving light bulbs, for instance, in the early 1990s. Being an early adopter of energy efficient technologies has meant we have been able to keep consumption flat.

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- This early energy efficient push means the average Dane consumes about half the energy of the average American.
- In spite of our sparse energy consumption, Denmark has one of the highest standards of living in the world. We live in modern homes with all the conveniences one expects in a highly developed society.

- In fact, Denmark had more cell phones and computers per capita earlier than almost any other country. We have some of the highest standards for energy efficient appliances.
- Buildings are also ground breaking. Houses built four years ago use half the energy than those built in the late 1970s. By 2020 new buildings will consume 75% less energy than they use today.
- Project Zero in Southern Jutland was included last month in the global C40-Climate Positive Development Program in partnership with The Clinton Climate Initiative.
- They have joined a global network of the world's most ambitious climate projects. Project Zero builds homes to the plus standard – that is, generating more energy than they consume. This municipality will reduce carbon to zero by 2029.
- Thisted municipality in northern Jutland is already fossil fuel free and the island of Samsø achieved energy independence within a ten year period and is also almost carbon free.

- All of this makes it evident that a high standard of living can go hand in hand with energy efficiency and low energy consumption.
- Like energy in the 1970s, Denmark takes very seriously the next big challenges – those of water and climate. We will react to these crises with the same resolve given to the energy crises we have faced.

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- Let's turn first to water. There is a world water crisis in terms of both quality and quantity in many parts of the world already.
- The World Water Forum states: "By 2025 it is estimated that 1.8 billion people will live in areas that suffer from severe water scarcity."
- Water is not only a critical issue in the developing world but also here in the US. The droughts in the Southwest and Southeast, over use of rivers in many areas, and contamination in general have impacted the US water supply.
- The use of water in producing fossil fuels is also a real concern. Water has not been part of the calculation when solutions are

evaluated nor has it been seen as a cost factor in the supply chain.

But that must change.

- It takes from one to five million gallons of water per well using fracking and more if re-fracking is required.
- In many areas where water is scarce the use of water in this way may be prohibitively expensive – or even prohibited.
- Water is also used in coal production. The US draws approximately 410 billion gallons of water a day from rivers, lakes, etc.
- According to the US Geological Survey, about 200 billion gallons a day is used to cool power plants – mostly coal fired power plants.
- At the same time, the US uses in the mining and burning of coal about the same amount of water going over Niagara Falls over a five month period.
- So water will need to be not only considered as a cost in production but the consequences of depleting the supply must also be taken into consideration.

- In Denmark, we have started seeing water efficiency as a companion issue to energy efficiency. Let's look at a few comparisons:

- In Denmark, the average person uses 30 gallons of water a day.
- In the United States, the average person uses 152 gallons per day.

And then there is the infrastructure issue:

- In Denmark it is rare to see a water main break. We see investments in our water infrastructure as a critical component in quality and supply. An aging infrastructure can lead to contamination and waste.
- Of course infrastructure costs money. But it is an investment that provides jobs, prevents other costs and makes sure we are not wasting a precious resource.
- In Denmark, we strive to use efficient sustainable solutions that make good financial sense. However, let me stress, we also want to maintain a high living standard and are just as much in love with our gadgets as the rest of the world.

- Now let me turn to climate. I understand that, in this country, many do not see climate as a serious problem.
- Many apparently believe fossil fuels and more fossil fuels will solve all the world's energy problems – despite the fact that the world's population will increase 50 percent by 2050 and global energy demand is conservatively projected to increase by 30 percent over 25 years.
- I strongly disagree. I am confident that fossil fuels and the build up of carbon in the atmosphere are accelerating the changes to the climate.
- Denmark sees the threat of climate change as a real crisis. We also understand that it is more expensive to respond after the crisis hits, rather than preparing for and anticipating the crisis.
- Reliance on fossil fuels also means depending on many of the most unstable regions of the world for ever increasing amounts of oil.
- We are committed to changing this direction, and we want to engage the private sector in our efforts. Further, by involving business early, the costs are more equitably shared.

- We also see a plus side: the opportunity for a new economy based on renewable energy and sustainable solutions.
- We see climate change as the catalysis for an economic revolution that will change our lives for the better and build a new economy for the 21st century.
- Denmark is making investments and improving regulations to prepare our cities for a one to two-meter sea level rise and, not least, we have passed a bill to make us a carbon free society by 2050.
- To achieve this long term goal, we will reduce green house gasses by 40 percent by 2020. And also by 2020, 50 percent of our electricity will stem from renewable energy.

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- Key to these efforts is that Danish business will partner with the Danish government to find new innovative ways to meet the challenges of climate, water and energy.
- The partnership between government and business is making Denmark an incubator for innovation and our companies will be ready with solutions just as they were in the energy sector.

- Just as clean tech is now the fastest growing part of Danish exports – currently accounting for about 15% of total Danish exports – we are positioning ourselves to also lead in water and climate solutions.

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- I want to conclude by saying that sustainable, clean energy solutions also address some of the issues related to climate change and water.
- We need energy that does not waste precious water resources and that does not put more carbon and other dangerous substances into our air. Without air and water, life cannot survive.
- We can solve these problems. But Danish experience demonstrates a strong partnership is needed between the private and public sectors.
- A key to success is government providing reliable, long term and fair rules of the road to guide private sector investment decisions.
- As one of the next speakers, Adam Monroe, the US head of Novozymes, a Danish company with large investments in the US, puts it: “We believe a strong partnership is vital to the success of any emerging industry, where the private sector provides the

innovation and lion's share of capital to develop it – and the public sector provides consistent policy support to grow it.”

- We also need to recognize that we are at a crossroads.
- Just as Europe and America were swept by an industrial revolution in the 19th century; just as America and later Europe and the world were swept by a fossil fuel revolution in the early 20th century; and just as America and the world were swept by an information/dot com revolution in the late 20th century; Denmark, Europe and America are now being swept by a new carbon free revolution.
- The transformation is coming. The only question is who is going to benefit and lead the transformation to the new carbon free world.
- Denmark has begun – not only because it is the right thing for the future, and for our children's children, but because it makes good economic sense.