



## A Prince and Four Peaks: Peak Oil, Gas, Coal and Uranium

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Today the second three-day [world future energy summit](#) began in Abu Dhabi. One of the biggest energy conference in the world that is being attended by key policy makers, financiers, leading academics and no less than 400 journalists from all over the world. The conference was opened by the Dutch Crown Prince Willem-Alexander, Prince of Orange and the Netherlands. He is perhaps the only prince in the world who regularly uses a bike to get around and save fossil fuels, as shown in the picture below. The prince spoke about the lessons that we need to learn from the collapse of the Roman civilization in perspective to the four peaks of oil, gas, coal and uranium that await us.



*"Ladies and gentlemen, did you know that when the Roman Empire finally collapsed, large parts of Europe had been deforested. Acres of forestland had been cleared for farmland and to provide firewood. Wood and food were essential, to maintain the roman empire. To meet their short term needs, the Romans overexploited their prime energy resource. They did not think about the consequences for later generations. So the demise of a seemingly invincible civilization was partially due to the unsustainable use of their prime energy resource. The question is, are we going to be any wiser?"*

*What the Romans were experiencing, we would now describe as peak wood. Reaching a point of maximum production after which it enters terminal decline. We are now facing a century of at least four undesirable peaks, peak oil, peak gas, peak coal and peak uranium. Mountaineers may be proud to conquer peaks, but there is no reason whatsoever for us to be proud. We can, however, change the course of history. The technologies we need are there."*

More information on the conference including the full speech by Crown Prince Willem-Alexander, links to the highly interesting program, and audio files of the presentations can be found below the fold.

- Link to the [full speech of Crown Prince Willem-Alexander](#)
- Link the [full conference program](#)
- Link to audio files of [all speeches at the media page](#) (username: wfes password: press)

### Full Speech

Transcript of opening speech at the world future energy summit by His Royal Highness, Prince Willem-Alexander, Prince of Orange, Crown Prince of the Netherlands

19 January 2009

“Your Royal Highnesses, Your Highnesses, Mr. Chairman, your excellencies, distinguished guests and delegates, ladies and gentlemen.

It is a delight to be here today at the second world future energy summit. Our aim at this summit is nothing less than to plot a revolution. A peaceful revolution that will provide us and generations to come with sustainable solutions for humankind's most pressing issues, climate change, energy security, and equitable human development.

First I would like to pay a tribute to His Highness, Sheikh Khalifa, President of the United Arab Emirates, and ruler of Abu Dhabi. And His Highness Sheikh Mohammed bin Zayed Al Nahyan, Crown Prince of Abu Dhabi and supreme commander of the armed forces, for their vision and support. Together they have set the United Arab Emirates on track to a sustainable future. And now they want the world to join them on their mission.

Ladies and gentlemen, did you know that when the Roman Empire finally collapsed, large parts of Europe had been deforested. Acres of forestland had been cleared for farmland and to provide firewood. Wood and food were essential, to maintain the Roman Empire. To meet their short term needs, the Romans overexploited their prime energy resource. They did not think about the consequences for later generations. So the demise of a seemingly invincible civilization was partially due to the unsustainable use of their prime energy resource. The question is, are we going to be any wiser?

What the Romans were experiencing, we would now describe as peak wood. Reaching a point of maximum production after which it enters terminal decline. We are now facing a century of at least four undesirable peaks, peak oil, peak gas, peak coal and peak uranium. Mountaineers may be proud to conquer peaks, but there is no reason whatsoever for us to be proud. We can, however, change the course of history. The technologies we need are there.

On a global level, the sun and the deserts present us with major opportunity. We know all energy resources originate from one source, one masdar, nuclear fusion from the surface of the sun. Arab traders sailed the Indian Ocean, long before Europeans ventured into these regions. The same winds Columbus used were there, generated by the sun's heat to make his historic journeys. My wife and I traveled to this beautiful city by plane, with fossil energy generated millions of years ago by that same sun. If it were up to the sun we would have no energy problems at all. Every 30 minutes the earth absorbs enough light to meet the energy needs for one year. Every 30 minutes, if only we could harvest it. To do so we need the world's deserts. Many regard deserts as a barren and hostile environment. In fact, they are a precious source of life, which we should embrace and protect for the common good.

The circle of deserts embracing the globe presents us with wonderful opportunities for both generating and transmitting solar energy. Large-scale solar plants in deserts, connected to a cross border or even intercontinental grid, are a fundamental solution for sustainable energy supplies after 2050. Two leading examples show ambition and vision: Abu Dhabi's concentrated solar thermal power plants and the Union for the Mediterranean solar plan. As an interesting side effect, and of great benefits for the local population, heat from the solar thermal power plants may be used to desalinate seawater or generate cooling. So heat and water stress, now almost analogues with deserts, can partly be solved while mitigating the effects of climate change. Although the solution may sound costly, scaling it up will make it a more profitable business than fossil energy.

The point is, if we don't treat energy as a long term investment, we will end up paying much higher bills. But we mustn't wait until solar energy plants and cross border grids are available for

sustainable energy supplies. We need to invest at the local level too. Technologies for local production of sustainable energy are readily available for both electricity and local cooling. These technologies can be applied without a large infrastructure, making them more promising than existing examples. There are three examples I would like to share with you today, two designed in the Netherlands and a third a joint venture between Canadian and Spanish scientists and entrepreneurs.

The first is the *green greenhouse*, a new generation of greenhouses that produces not only plants and food but also clean electricity, heating and cooling. One transformed, greenhouse can provide sufficient energy for 200 homes. The green greenhouses produce biogas for electricity generation and uses the CO<sub>2</sub> thus generated to stimulate the growth of plants. This process also produces water of drinking quality.

The second example is vacuum sewerage for toilet and kitchen disposal. The sewage is used locally for the production of biogas. The pipelines are only half the size of the normal pipelines, giving higher flexibility for construction. Both CO<sub>2</sub> emissions and water use are reduced by 50%. No larger infrastructure is required and developing regions are presented with the opportunity to obtain much better water conditions.

The third example is the production of clean energy by a new, completely closed system of garbage gasification in small units. 99.8% of the total garbage supply is re-used or converted, producing 80% more biogas than it uses. No water is wasted during the process. On the contrary, water is one of the products.

What makes all these technologies interesting is that they contribute to the solution of the energy problem and also help in other areas. They help us reduce water scarcity and get rid of excess waste, and present new economic opportunities in developing regions. Contrary to general belief, they are no more costly than the traditional polluting production processes. In fact, they result in substantial savings. The payback time, in green greenhouses for example, is only three years.

So, ladies and gentleman, we know the technologies are there, for both global and local solutions. We need the political will and the right approach to investment for a fundamental transition toward a new energy system. We owe it to our children and to future generations. Investments in sustainable solutions make our communities healthier, our planet cleaner, our economy stronger, and our future brighter.

Let us look beyond the current financial and economic crisis and build the foundations of a sustainable future. As a result of this crisis, billions of dollars of public spending are needed to build better economies and generate economic growth. If we spend wisely in sustainable solutions, these investments will also contribute towards rescuing our planet. However, the temporary rise in coal dependence will cancel out our efforts to reduce CO<sub>2</sub> emissions. Many countries, including the UAE and the Netherlands, are investing in new carbon capture and storage or CCS technologies which are expected to have a positive impact in the short and medium term, but this may distract us from our primary objective, which is to arrive at the one source of energy that makes life possible on mother earth, our sun.

With the fossil dependent technologies we are using now, we are burning our home and trying to hide the smoke with CCS. Nonetheless, CCS technologies are definitely an improvement on current technologies. And we hope that it will offer clear prospects of finding real solutions and developing truly sustainable consults. Politicians, entrepreneurs and citizens alike should work together like firefighters, and put out the fire and save our home. Let us not end up like the Romans. Instead, let us harvest the infinite energy generated by this majestic star that rises and sets on us each and every day. Here in Abu Dhabi, we can see the challenges ahead of us, and set the example.

Thank you very much.

His Royal Highness, Crown Prince Willem-Alexander of the Netherlands"



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