

December 1, 2011

An Interview with Ayed Al-Qahtani , Senior Project Manager Global Energy Scenarios, WEC London



Ayed Al-Qahtani is Senior Project Manager for Global Energy Scenarios and Project Coordinator for Global Transport & Mobility at the World Energy Council in London. Currently seconded by Saudi Aramco to lead these two projects, he joined the company in 1993 and served in multiple exploration and producing departments in the organisation, more recently working for Corporate Planning.

What was your goal when starting building the Transport Scenarios?

As you may know, the global transport sector will face many challenges relating to population demographics, urbanization, traffic congestion, local pollution, noise, and economics. These challenges will be compounded by the uncertainties emerging from the unpredicted degree of government intervention, regional cooperation, unpredicted global economic situations, and potential technology breakthroughs. Given these challenges and uncertainties, a decision was taken to re-examine the future relationship between energy and transport and build two Global Transport Scenarios out to 2050. The sole aim of such a task is to construct and describe potential global transport scenarios that reflect potential developments in transport fuels, technologies, and systems over the course of the next four decades.

In building the Scenarios reports, how did the network get together?

To help achieving our goals, WEC tapped into its vast network of experts and assembled a team on transport comprising 54 members from 29 countries. The team, supported by IBM project partner, identified and evaluated existing and potential breakthroughs in transport technologies, fuel and systems, both qualitatively and quantitatively. In addition, the team conducted six regional workshops to identify the driving factors and specific inputs to the various regions and finally held a scenario design workshop in London to draft the scenarios.

Which were the scenarios you came out with?

We identified two transport scenarios in 2050: "Freeway" and "Tollway." The main difference between the two scenarios is the government intervention to regulate transport markets. In the freeway, we envisioned that the market will take over and determine the solutions while in the tollway, the government takes over and put the common interest at the forefront. The two scenarios, along with the developed regional inputs, were then translated into numeric assumptions and fed into the model developed by project partner Paul Scherrer Institute (PSI) for quantification.

Which were the key learning points?

We noted that the global transport fuel demand will increase by 30-80% above the 2010 levels. The bulk of this increase is expected to come from trucks, trains, ships and air planes. Indeed, this all depends on the degree of government intervention to regulate markets. We also noted that the demand will shift to non-OECD countries, especially China and India and that demand for gasoline, diesel, fuel oil and jet fuel will increase by 10-70% above the 2010 levels and will still constitute 80-90% of the transport fuel market. The increase is entirely diesel and jet fuels as the gasoline market is expected to shrink. The biofuels will increase by about 4 folds while other fuels including electricity, natural gas, hydrogen, and fuel cells will increase by 6-7 folds. Globally, the total number of cars will increase by 2.2 to 2.6 folds. Most of this increase will come from non-OECD countries in which numbers will increase by 4-5 folds, while OECD countries will increase by 36% to 41% only. CO₂ emissions from the transport sector, which currently represent 23% of global CO₂ emissions, are expected to increase by 15-80% depending on the degree of government intervention.

What would be the implications for the energy industry, but also for policy makers and consumers?

Clearly, this will have serious implications on all players in the global transport market. Oil and gas producers will have to invest in resources to make sure that the additional 10-70% additional demand on oil will be satisfied. Refining companies will also have to build refineries in a timely manner and close to the future demand centers. Their new refineries configurations will have to take into account the expected significant increase in demand for diesel and jet fuel and the drop in gasoline demand. Access to gasoline may constitute a problem. As for policy makers, dealing with the additional CO₂ emission will be the most challenging. I believe that deploying the right mix of policies specifically tailored to suit different regional needs will ensure a sustainable future for transport, and will raise optimism about a better quality of life for current and future generations.

WEC Debrief

"The Future of Mobility" by Swiss Energy Council, 20 October 2011, Swiss Institute of Technology (Zürich)

On October 20th, The Swiss Energy Council organized an event around "The Future of Mobility" and united, at the Swiss Institute of Technology in Zürich, leading researchers in the field of future driving technology.

During the day, Swiss researchers presented their predictions about the driving technology that will rule the future. Philipp Dietrich from PSI and Director of the Competence Center Energy and Mobility, predicted that electric vehicles (fuel cell and battery-driven) will play an increasingly important role in the mobility of the future and while fuel cells would be more suited for short distances, electric vehicles would be more adapted for long distance travel. According to Christian Bach from the Swiss Federal Laboratories for Materials Science and Technology, natural gas/electric hybrid passenger cars with a fuel mix of natural gas, biogas and hydrogen would be very effective in reducing greenhouse gas emissions and should therefore play a more central role. Dr. Konstantinos Boulouchos explained that the leading driving technology of the future does not yet exist. He said that emerging technologies are more or less likely to fulfill our current needs; including plug-in hybrids; but that only in a second stage will most vehicles become electrified.

The event was open to members of the Swiss Energy Council, students and important media including the leading Swiss daily TV news programme.



WEC Agenda - We invite our members to attend the following events:

The Energy Picture of Europe 2050
6-7 December 2011 - Paris

Organised by: Conseil Français de l'Energie
 Contact: Mr. Jean-Eudes Moncomble
 Details : +33 1 40 38 17 38 - cfe@wec.france.org

India Energy Congress 2012
23-24 January 2012 - New Delhi

Organised : Indian Member Committee
 Contact: Mr.Gautam Vivek
 Details: +91 11 24363719 - gvwecimc@gmail.com

Africa Indaba Energy
21-23 February 2012 - Johannesburg

Contact: Candice Scorer
 Details: +27 11 463-9184 - candice@energyindaba.co.za
www.energyindaba.co.za

FOREN 2012 - Central and Eastern Europe Energy Forum
17-21 June, 2012 - Black Sea, Shore resort Neptun-Olimp

National & Regional Energy Policies & Strategies. Security of Supply
 Organised by: Romania National Committee
 Contact: Dr. Gheorghe Balan
 Details: +4021 2114155/56 - foren2012@cnr-cme.ro
www.cnr-crm.ro/foren2012

WEC World Energy Leaders' Summit
19-20 April 2012 - Istanbul

** Registration open soon**
 Email: chandler@worldenergy.org

World Energy Congress
15-17 October 2013 - Daegu, South Korea
THEME: Securing Tomorrow's Energy Today
www.daequ2013.kr

Further details on WEC [Events Page](#)

WEC News

Launch of the "Global Transport Scenarios 2050" report

The report will be launched on Thursday 8th of December during the 20th World Petroleum Congress in Doha. Karl Rose, Director Policy & Scenarios at WEC and Ayed Al-Qahtani, Senior Project Manager for Scenarios will present the report to delegates and international media during a special session of WPC. A full brief and pdf copy of the report (to download from our Website) will be available soon for all committees to promote it in their own countries!



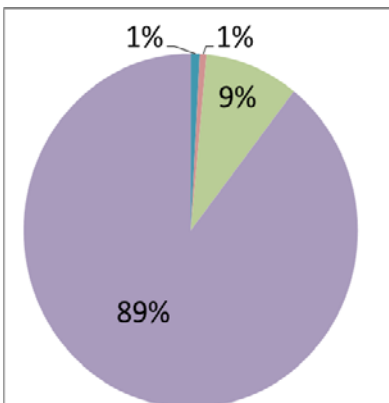
Patron: We are delighted to announce that Hydro-Québec have renewed their WEC patronage.

Executive Assembly Oran: A summarised review of the EA will be available in our next WEC Inside.

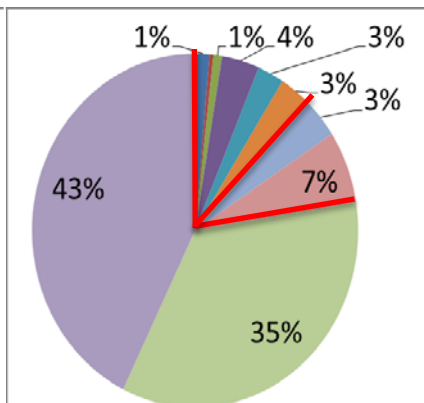
Inside Insight

"Global Transport Scenarios 2050": Policy will greatly impact car technologies market shares in 2050

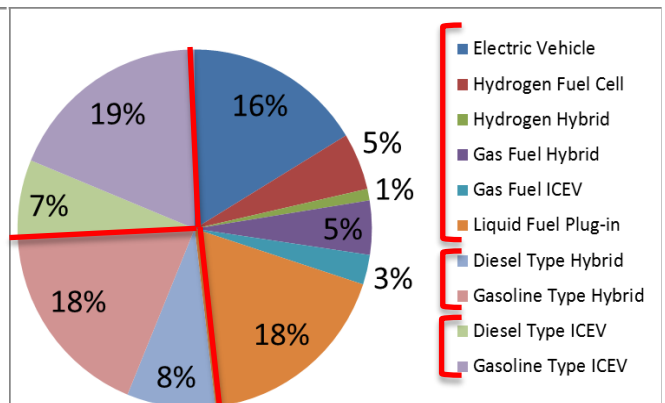
Car technologies market shares 2010 Market shares: Freeway 2050



Market shares: Freeway 2050



Market shares: Tollway 2050



The modelling results of Freeway show that the global car fleet 2050 will still be dominated by a 78% share for the conventional liquid fuel ICEV (43% gasoline and 35% diesel). Gasoline and diesel hybrids are expected to constitute a market share of over 10% while the gas ICEV and gas hybrids are expected to be about 7% of the market. The remaining minority share is captured by electric, fuel cells, and plug-in vehicles.

In Tollway, the global car fleet in 2050 will be very diverse, with shares of 26% for liquid fuel conventional ICEV (19% gasoline and 7% diesel); 26% for liquid hybrids (18% gasoline and 8% diesel); 18% plug-ins; 16% electric; 8% gas vehicles, and 6% for others.

Global transport will remain heavily dependent on fossil fuels with a strong rise in demand for diesel, fuel oil and jet fuel. The absolute levels of increase in transport volumes and fuel demand will largely depend on the type of government policies put in place over the next few decades. Policies will impact the number and technology mix of cars and trucks on the road, and emissions resulting from additional transport activity compared to gasoline.

Christoph Frei, Secretary General
World Energy Council

Regency House, 1-4 Warwick Street, London, W1B 5LT, UK
 Tel: (+44)2077345996, Fax: (+44)2077345926, Skype: christoph-frei
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