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## $6^{\text {th }}$ Bruges European Business Conference Drivers of Growth: Workshop on Energy/Policyintegration

Joost Van Roost, President, Esso Benelux 17in March, 2015

## Oil and gas to remain critical to global economic progress

## Global Mix of Fuels

Quadrillion BTUs


Source: Smil, Energy Transitions (1800-1960)

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## ... and to EU energy supply and policy goals



## By Fuel

Quadrillion BTUs


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## Natural Gas:

The 'No Regrets' Fuel Choice for Electricity Generation

| Relative benefit/impac | Coal | ${ }_{\substack{\text { Coal } \\ \text { cos } \\ \text { cos }}}$ | Natura | Nuclear | Wind | Solar Photovoltaic |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Construction Cost | - | 0 | - | $\bigcirc$ | - | (1) |
| Electricity Cost | $\bigcirc$ | - | $\bigcirc$ | O | (1) | 0 |
| Land Use | (1) | (1) | O | - | 0 | 0 |
| Water Requirements | $\bigcirc$ | $\bigcirc$ | (1) | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| $\mathrm{CO}_{2}$ Emisiosins | $\bigcirc$ | 0 | (1) | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| Non-CO ${ }_{2}$ Emisisions | $\bigcirc$ | $\bigcirc$ | (1) | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ |
| Waste Products | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | (1) | $\bigcirc$ | $\bigcirc$ |
| Availabily | $\bigcirc$ | $\bigcirc$ | $\bigcirc$ | - | $\bigcirc$ | $\bigcirc$ |
| Flexibility | (1) | (1) | $\bigcirc$ | 0 | $\bigcirc$ | $\bigcirc$ |

Source: EPRI, Generation Technology Assessment

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## Refining is important to European energy goals

Refining is the critical link between oil production and products demand:

LPG / Propane
Chemicals feed

Gasoline
$\square$ Aviation fuels

- Diesel

Crude Oil Input



Fuel oil


Wax/Asphalt

Source: U.S. Department of Labor

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