

**Objective:**

**Identify viable fuel and powertrain options to reduce GHG generation and SoS concerns**

**Observations on two themes:**

**1. SoS:**

- **Heavy reliance on conventional fuels will remain**
- **Few credible and economic alternatives available**  
Diversification in two directions:
  - o those which can continue to use existing infrastructure, i.e. liquid fuels like Biofuels, BTL, GTL
  - o those which will require “other” distribution e.g. CNG and H2. In the latter case the source of H2 is crucial
- **Energy savings**

**2. GHG generation:**

- **Transport in BAU scenario major and growing source of GHG's**
- **WtW studies show potential for GHG reductions but most low GHG fuel options are very energy intensive and costly**

**Therefore future technology options should focus on:**

- **Engine fuel efficiency**
- **Low carbon fuel options**
- **Innovative car concepts** (smaller, lighter but still safe and comfortable)
- **Innovative public transportation options**
- **Traffic management**

**3. Other pollutants no longer an issue:**

- Major progress achieved in controlling pollution emissions
- S-free fuels enable future generation of advanced engines and after-treatment incl. particulate traps
- Further fuel spec changes offer little further AQ benefits and would increase CO2

**4. Future options require systems approach fuel-powertrain-driver**

**5. Selection Criteria:**

- **Driven by ability to contribute to two objectives SoS and especially CC (ref WtW)**

- **Solutions should be:**
  - o **technically feasible**
  - o **cost effective** i.e. not require subsidies, de-taxation or other market distorting mechanisms
  - o **Robust** in long term (no regrets)

**And have**

- o **(global) customer/market acceptance**
- o **acceptable time to market**

#### **6. Most value added:**

- **Build on existing technological strengths**
- **high innovation content**

#### **7. Needs from government:**

- **establish technologically neutral ambitions**
- **allow market to function:**
  - o no choosing of winners early
  - o avoid market distortions
  - o set stable and simple (consistent) legislative environment
- **support innovation and creativity through:**
  - o high quality education
  - o flexible, skilled workforce
  - o business environment which allows entrepreneurship to blossom
- **enhance awareness through sustained (consumer) information campaigns**
- **provide leadership**