

# Bio-ethanol: an Environmental Opportunity For Europe?



Andy Taylor – Director, Sustainability and Corporate Citizenship, Ford Europe

# The Issues

- Transport almost totally dependent on oil
- Few alternative technology choices for transport
- Climate change is real
- There is no technology “silver bullet”

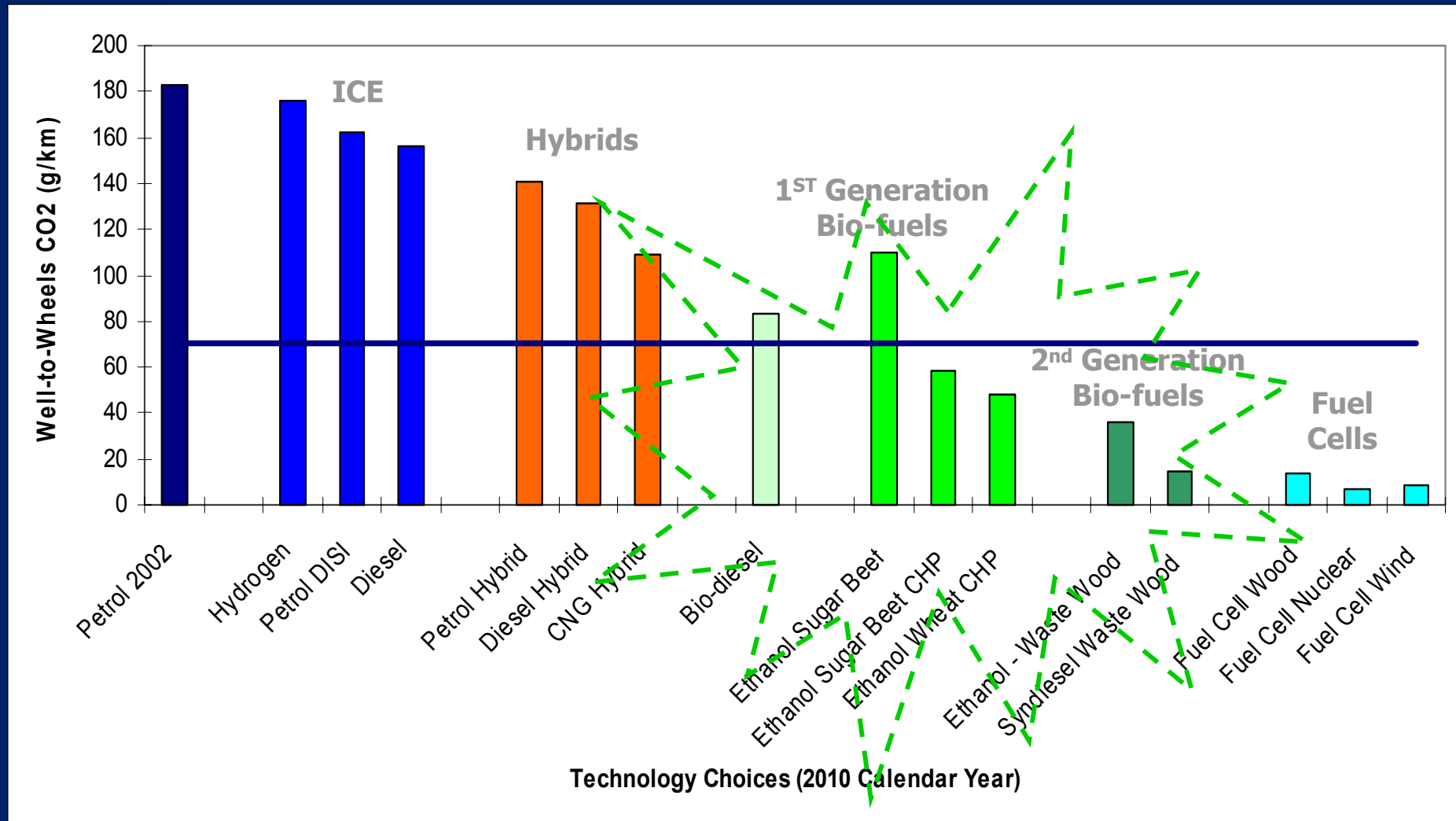


# The Way Forward

- Ford Motor Company (FMC) recognizes that our industry is part of the climate change problem but we are also committed to be part of the solution
- Traditionally efforts concentrated on:
  - Auto. companies -- Improving energy efficiency kJ/km
  - Governments/Authorities -- Using cars less; promotion of public transport, etc
- **Neglected carbon intensity of fuel, g CO<sub>2</sub>/kJ ⇒ low carbon-fuels/bio-fuels**

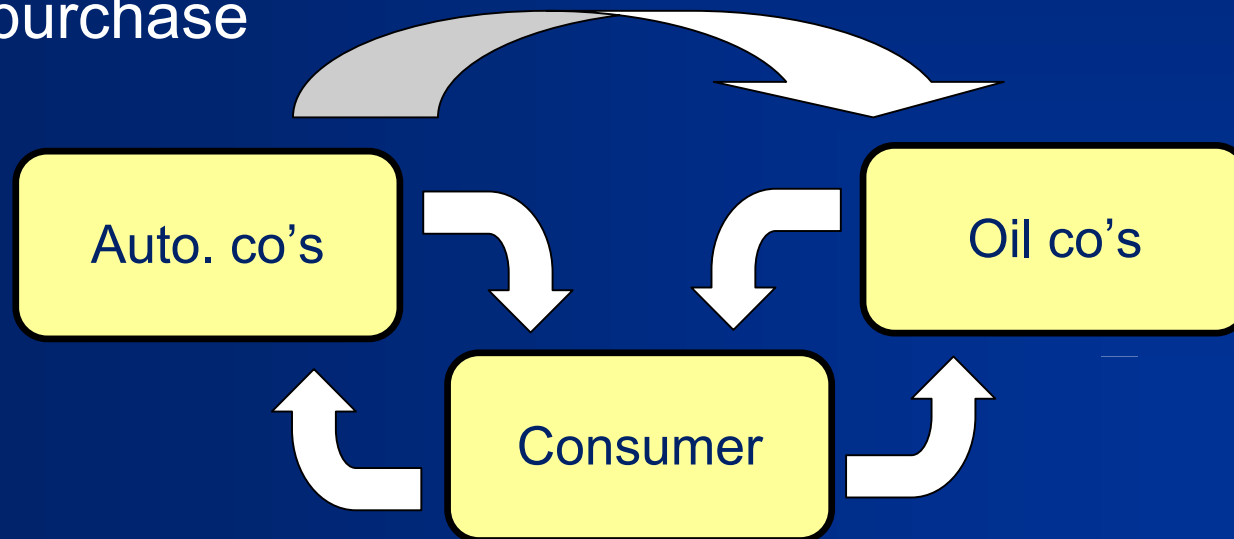
# Pathways to Address Car Transport CO<sub>2</sub>

WTW CO<sub>2</sub> Emissions (g/km) from Different Fuel/Powertrain Combinations: 2010+



# Bio-Fuels

- Way forward needs policies that drive the stakeholder behaviours:
  - Auto co's -- Promote low carbon capable vehicles availability
  - Oil co's -- Promote low carbon fuel distribution
  - Consumers -- Promote low carbon capable vehicle purchase



# Government Policies

- Recognition that don't have the answers – but don't look for perfect solutions
- Know the direction want to head and then action
- Use right measurement tools; don't sub-optimize
- Policies that drive behaviour for all 3 stakeholders (auto co's, oil co's and consumer); avoid broken linkages

Can debate the issues and debate a more perfect solution or we can do something now

# Addressing the Consumer Road Blocks

- Recognition that WtW is the appropriate yardstick for measuring CO<sub>2</sub> impacts
  - Vehicle Circulation Tax
  - Purchase Tax
  - Company Car Tax
  - Fuel Tax
- Focus on vehicles and fuels as a system. Technology neutral approach that rewards good CO<sub>2</sub> system performance

# Ford Focus Flexi Fuel Vehicle (FFV)



# Ford Focus Flexi-Fuel Technology

- “Flexible” vehicle (FFV) using E85 or gasoline
- E85 = alternative fuel i.e. 85 % ethanol and 15 % gasoline
- 1 fuel tank for E85 or gasoline
- E85 & gasoline can be mixed freely in any combination
- Same power output as conventional 1.8litre gasoline
- Equal acceleration and top speed with gasoline version
- Typically 30% less range than gasoline – bio-ethanol has 30% less energy



# Summary

- Ford committed to being a part of the solution
- No silver technology bullet
- Significant opportunity from bio-fuels - addresses CO<sub>2</sub>/global warming, technology, energy security - and available now
- Promote bio-fuels through taxation (based on CO<sub>2</sub> content) and infrastructure - both low-blend and high-blend, an oil company challenge!
- Integrated Approach: auto - oil - consumer!

