

# Well-to-Wheels analysis of future automotive fuels and powertrains in the European context



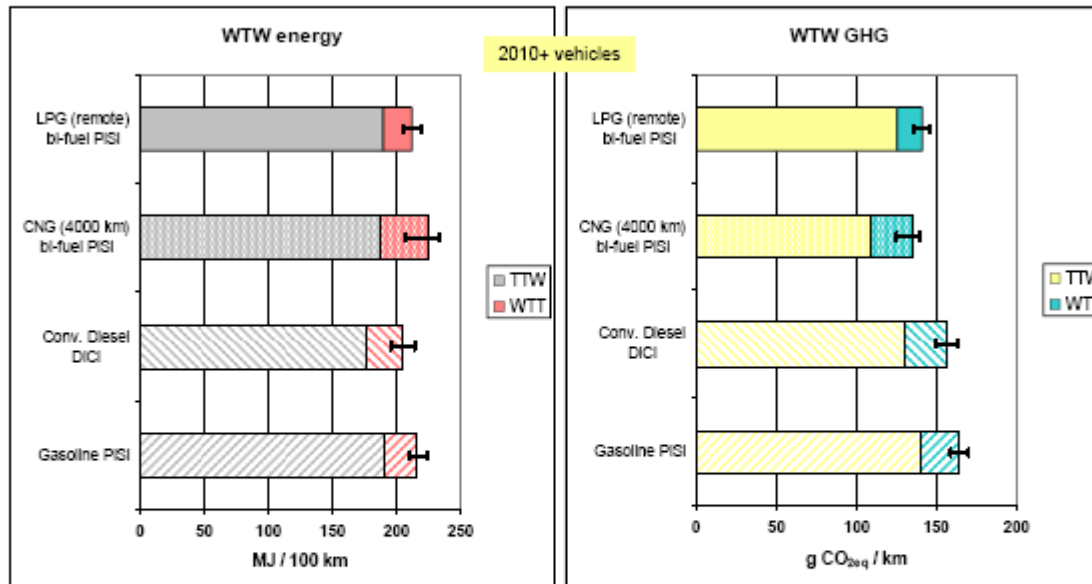
A joint study by  
**EUCAR / JRC / CONCAWE**  
**Overview of Results**

## LPG vehicle results

	Fuel consumption (/100 km)			GHG emissions (g CO <sub>2</sub> eq/km)				Engine efficiency	Vehicle efficiency
	MJ	l	kg	as CO <sub>2</sub>	as CH <sub>4</sub>	as N <sub>2</sub> O	Total	%	%
<b>PISI conventional</b>									
LPG 1.6 l	223.5	8.83	4.86	146.7	.8	0.9	148.4	18.7	16.6
Gasoline 1.6 l	223.5	6.95	5.21	166.2	.8	.9	167.9	18.7	16.6

- Same energy consumption
- 12 % lower TTW CO<sub>2</sub> emissions with LPG (C/H ratio)

## LPG (from remote gas fields)



- **LPG's GHG emissions lie between diesel and CNG and energy between gasoline and diesel**
- **Transport distance has a significant impact**
  - Assumption is 5500 nautical miles, i.e. Middle East origin