

National Energy Board Energy Demand Panel Discussion

**“Why will energy demand in the next 10 years be any different
than the last 10”**

Calgary, 21st April 2006

Nick Fulford
SVP, Upstream Gas and LNG



Centrica Today – Group Companies



- 12.6 m residential gas customers
- 6.2 m residential electricity customers
- No.1 in maintenance & installation of domestic central heating
- Offers plumbing, drain services, home electrical, and kitchen appliance cover
- 370,000 business gas customers
- 535,000 business electricity customers



- 1.9 m residential & small commercial gas customers
- 1.4 m residential & small commercial electricity customers
- 1.7 m home and business service customers



- Approx. 80% of UK gas storage in Rough facility
- 600,000 electricity and 200,000 gas customers in Belgium
- Emerging SME business in Spain



- Manages energy supply, contracts, trading and UK resources
 - 2.4 tcf proven & probable gas reserves
 - 2.9 GW power generation capability

This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies



Centrica North America

Managing more than 5 million customer relationships

★ Main Offices

60,000 commercial business customers across North America

35,000 gas customers in Manitoba

100 mmcf/day of gas and 0.5 million bbl pa of oil and gas liquids production in Alberta

More than 1 million gas and electricity customers in Alberta; Also provide energy-related services to residential customers

1.2 million natural gas and electricity customer relationships; and 1.7 million Home Services customer relationships

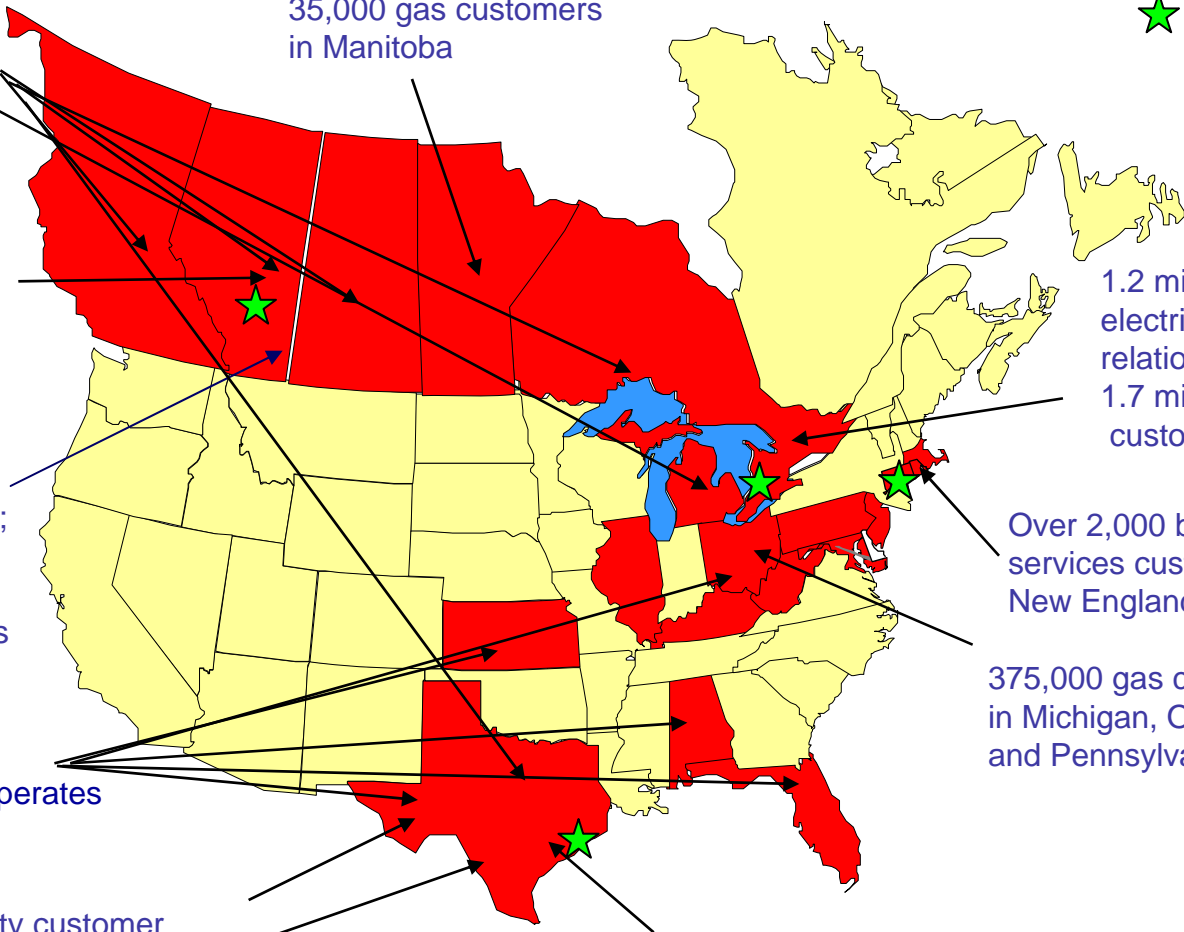
Over 2,000 business services customer meters in New England

375,000 gas customer relationships in Michigan, Ohio and Pennsylvania

U.S. Home Services operates in 10 States

685,000 electricity customer relationships in West and South Texas

315,000 electricity customer relationships in Houston and Dallas/Fort Worth areas



This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies



Will cost change behaviours?



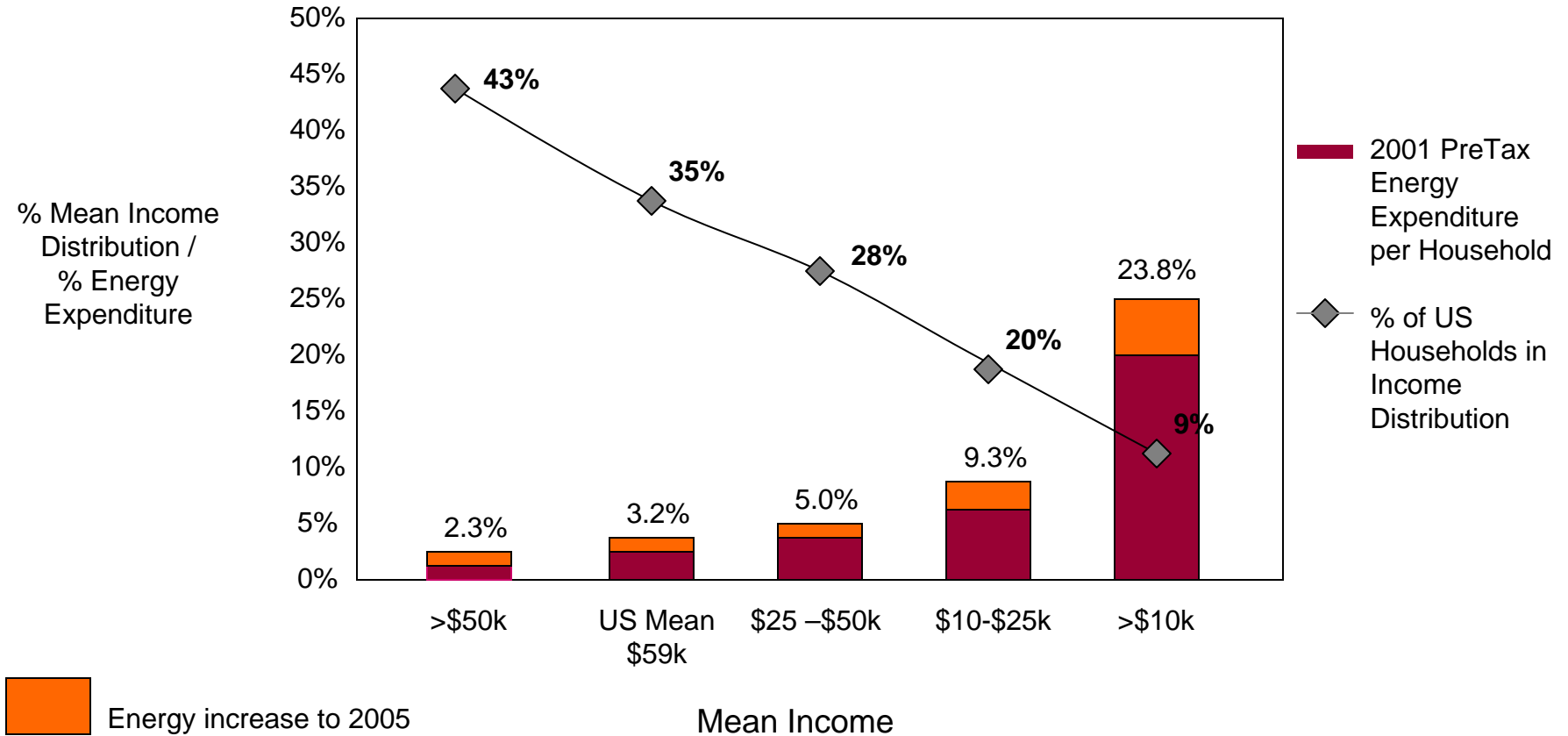
- Recent fuel price rises have made heating “top of mind”
- “Sticker shock” has changed behaviours (but for how long?)
- Prices more likely to increase than decrease (longer term)
- Emphasis on subsidy or longer term efficiencies?
- Canadian federal subsidy for low income families - \$565m
- Equivalent to about 37bcf (average demand in 40,000 homes)
- Equivalent to 80 bcf in energy efficient investment???

This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies



Impact is greatest on “Fuel Poor”

PreTax Income and Household Residential Energy Expenditure 2001



This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies



Demographics

- In 2026 a Grade 3 student will have become a home owner
- His or her values will be radically different from ours
 - Environmentally aware
- Sustainability more important than economic growth
 - Climate change
 - Renewables
 - Globally linked economy
 - Energy security
- But...increase in single dwellings will counter benefits



This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies



Generation Z - Digital Natives

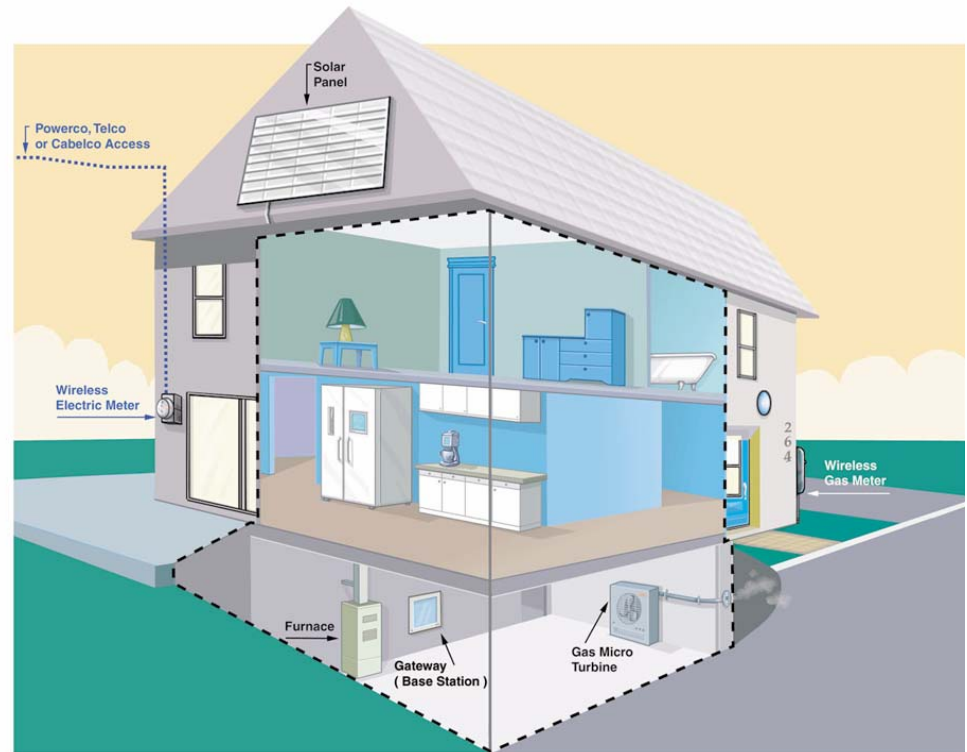
- Whole life spent “connected”
- Billions of IP enabled devices
- Home will be full of them
- Customer expectations
 - Means to control home environment
 - Energy visibility
 - Cost containment
 - Efficiency
 - Remote management
 - Home automation
 - GFAs (Grid Friendly Appliances)



This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies

Technology

- Smart meters will be the foundation
- Energy savings of 10% from visibility alone?
- Behavioral changes
- Time of use (TOU) pricing
- Smart appliances
- Micro-generation, geothermal, solar and other technologies



- Concept of “energy meter”
- Mix of imported and self-generated energy

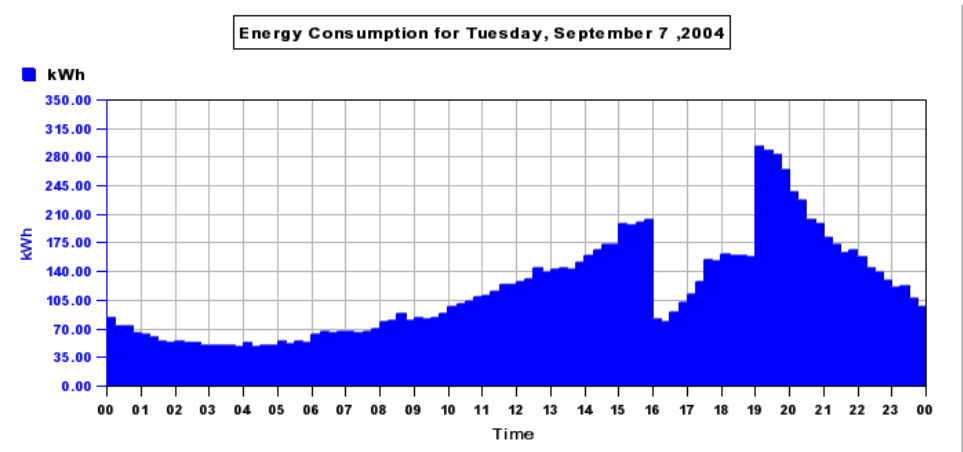
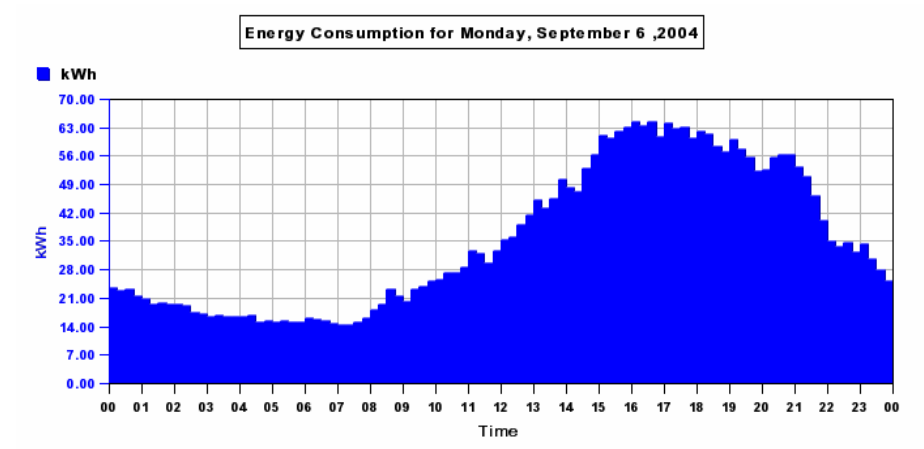


This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies



Residential Demand Response – learnings from pilot

- The typical household:
 - gave up comfort to receive savings and recognition
 - Invested time learning to manage TOU rate on their own terms
- Average savings between 1.5kw to 3kw per household
- Equivalent to a peaking power station
- Concept of “negawatts” will become mainstream



This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies



The Holy Grail – Interconnected front, back office, trading desk, dispatch

- Make customer focal point of energy management process (instead of generator/producer)
 - Integration with wholesale trading mechanisms
 - Benefits shared with customer
 - Capacity savings
 - Capital cost savings
 - Greater reliability
- Huge IS challenge
 - Billing in real time
 - Control of millions of appliances
- Customer tolerance
- Likely to transform energy supply industry

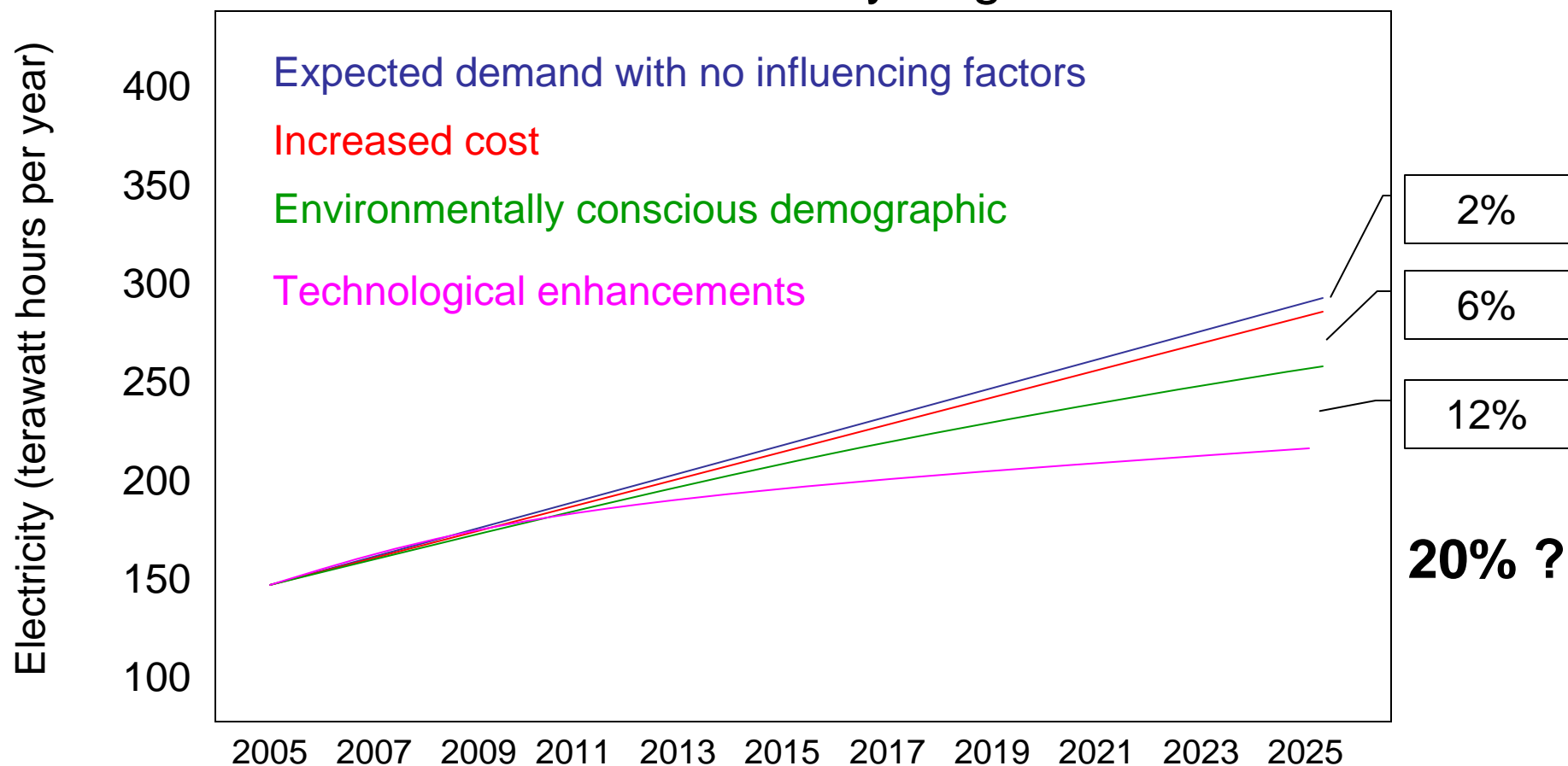


This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies



Residential Electricity Demand

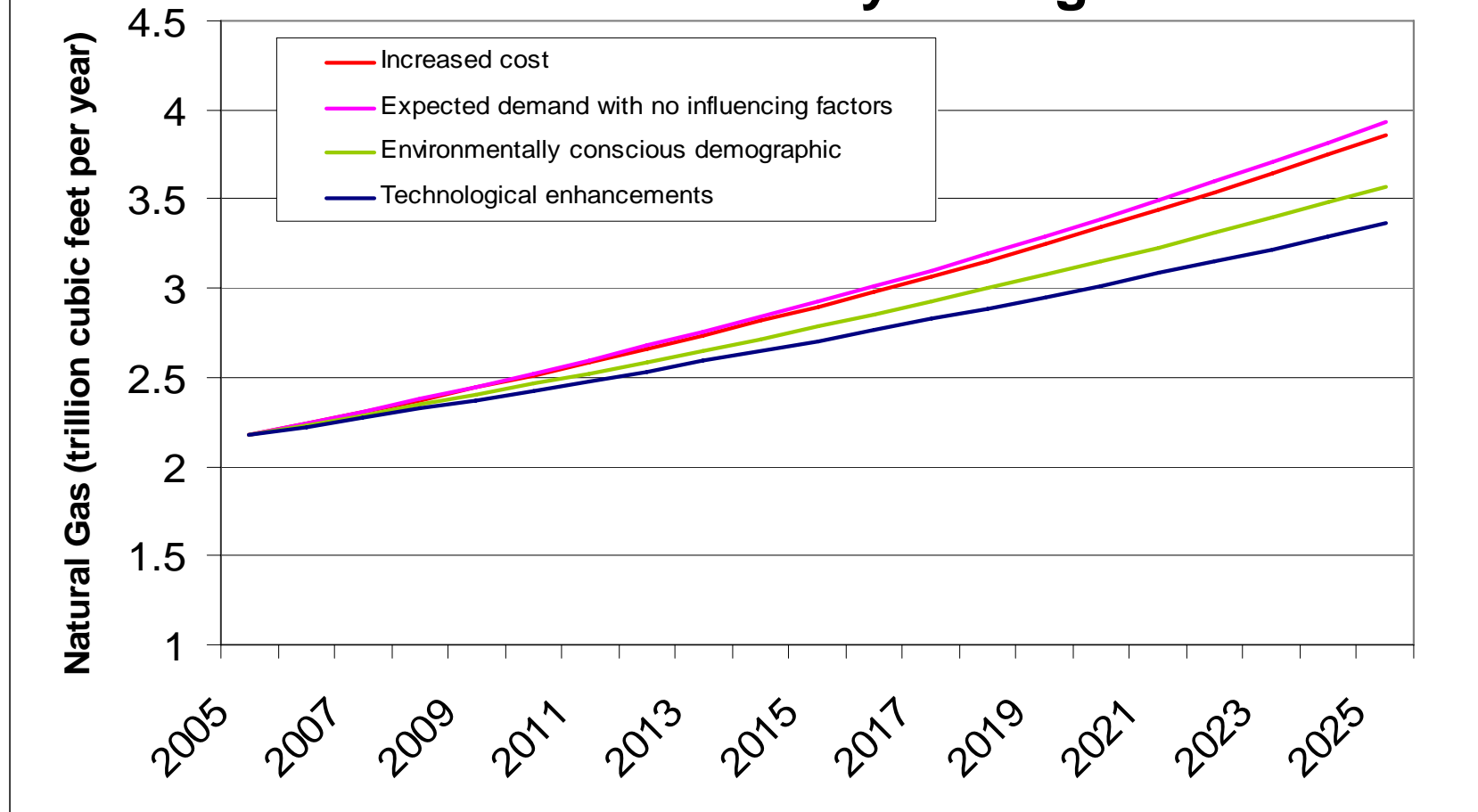
Indicative efficiency targets?



This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies



Residential Natural Gas Demand Indicative efficiency savings?



This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies



Conclusions

- Price will have an impact, especially on “fuel poor”
 - Social policies will have to become more sophisticated
- Changes in customer demographic - energy and cost savings
 - Customer values and expectations will change significantly
- Europe
 - Environmental concerns growing
 - Building technology (certification)
 - Emphasis on efficiency, not straight subsidy
 - Less scope for substantial change
- North America
 - Technology will be at forefront
 - Efficiency could build in importance
 - Very substantial scope for savings - positive impact on economy

This is intended for information purposes only and does not represent the views held by Centrica plc or its subsidiary companies

