Chemical Engineering

Make a positive change
Chemical Engineering

• is all about molecular transformations

• creates critically important products from simple starting materials

• For example

  Clean water from contaminated groundwater or seawater

  Complex pharmaceuticals from genetically engineered cells
Chemical Engineering

- More examples

  *Transform the carbon dioxide in power station emissions into algae biomass, and then biofuels*

  *Build implantable biomaterials from simple starting materials*

  *Create new food products with a longer shelf life, or vaccines that don’t require refrigeration*
Chemical Engineering

• is helping to address the key challenges facing the world this century

• Water scarcity

• Energy and Climate Change

• Human health
Water scarcity

- 1.1 billion people live without clean drinking water
- 2.6 billion people lack adequate sanitation
- 3,900 children die every day from water borne diseases
- Chemical engineers are creating new water solutions, at every scale and level of complexity
Chemical engineering is leading the revolution.
Energy and Climate Change

Chemical engineering is leading the revolution
Energy and Climate Change

Chemical engineering is leading the revolution
LET’S HELP TO KEEP THE SKIES BLUE.
LET’S GO.

We all need clean air. Not just for today’s kite-flying trip, but for future generations who want to live and play under cleaner blue skies. That’s why, for example, at Shell Brazil we’ve created a fuel oil for factories that can cut soot emissions by up to 75%. It should help Raul and his friends breathe a little easier. Just one of the many things we’re doing to help build a better energy future. Let’s go. [www.shell.com/letsgo](http://www.shell.com/letsgo)
Human Health

• The development of new pharmaceuticals has shifted steadily from chemical synthesis to tailored proteins.

• These biopharmaceuticals are the fastest growing segment of the market, and account for 20% of new FDA approvals and 40% of products under development.

• *Chemical engineers are involved in every stage of the process.*
Human Health

- Biomedical Science and Chemical Engineering are highly complementary fields of study, especially if you want to make an impact on human health outcomes
Chemical Engineering

Make a positive change
Credits

All images used under Creative Commons Licence, with thanks to the following
David Pedler
World Bank Photo Collection
NASA
Garnaut Climate Change Review
K. Ladewig PhD Thesis (UQ)