



“Jaccard's *Sustainable Fossil Fuels* is a beacon for rational decision making in the 21st century. Buy it and read it. It could change your world forever.”
(Neil Reynolds, Globe & Mail, Toronto)



Sustainable Fossil Fuels: The Unusual Suspect in the Quest for Clean and Enduring Energy

Environmentalists are gambling the fate of the planet on their naïve belief that humanity can rapidly abolish fossil fuels. Professor Jaccard's new award-winning book, *Sustainable Fossil Fuels*, by Cambridge University Press, reveals the flaws in this thinking with a unique perspective on our two major energy challenges – oil depletion and climate change – showing that fossil fuels can make a critical contribution to the achievement of a clean, enduring and affordable global energy system.

Peak oil doomsayers claim otherwise, but this is not the end of the age of oil. It is the end of the age of easy oil. We may soon reach a peak in conventional oil production, but the earth holds at least one thousand years of unconventional oil (oil sands, heavy oil, oil shale), conventional natural gas, unconventional natural gas (deep gas, gas hydrates), and coal. When the price of oil is above \$40 per barrel (currently it is \$70), these substitutes can profitably produce the gasoline, diesel and other refined products we get from oil – which explains the rapidly growing investment in them.

But while high oil prices and substitutes for easy oil address the oil depletion challenge, they exacerbate the climate challenge. As countries like the US and China turn to oil sands in Canada, heavy oil in Venezuela, and their own plentiful coal resources to produce fuels and electricity, CO₂ emissions climb more rapidly because of the high carbon intensity of these resources and the energy-intensive processes involved in their conversion to liquid and gaseous fuels.

Abolishing fossil fuels, however, is not necessary to prevent CO₂ emissions, as zero-emission energy from fossil fuels only requires integration of technologies already used in industry for

decades. Any fossil fuel can be converted into electricity, hydrogen or heat, with its carbon captured and stored safely underground. These clean forms of energy can satisfy every energy requirement in homes and factories, even replacing transport fuels, making this the cheapest and quickest way for humanity to reduce greenhouse gas emissions in the timeframe required by climatologists.

In a global energy system that will inevitably grow to at least three times its current size in the course of this century, continued use of our vast fossil fuel resources in concert with carbon capture and storage will buy time for progress in energy efficiency, renewable energy technologies and nuclear power. Low cost, clean fossil fuel energy is critical for the economic and social development of the world's poorer countries. It also provides a means for a country like the US to develop its plentiful domestic coal, oil shale and other resources in ways that reduce its energy dependence on unstable regions without destabilizing the planet's climate.

If they want to see successful action on climate change, environmentalists must stop portraying our energy options in simple terms of good and evil, and recognize instead that quick change won't happen if we deny a future to the workers and regions whose resources currently meet 85% of global energy needs. Fossil fuels can be a friend rather than a foe. At the same time, the fossil fuel industry must provide leadership in calling for gradually tightening regulatory and financial constraints on the use of the atmosphere as a free waste receptacle in order to stimulate the development and wide-spread adoption of zero-emission fossil fuel technologies.

Sustainable Fossil Fuels shows how these usually antagonistic interests can work together to save the planet. Experts and non-experts alike are enthusiastic about its timely contribution.

"Professor Jaccard tackles the two key global energy problems, an apparent shortage of oil and a dangerous build up of CO₂ in the atmosphere, and presents an original perspective on how simultaneously to resolve them with such clarity that it appears obvious – after you have read the book!" - Professor John Gibbins, Imperial College, London.

"*Sustainable Fossil Fuels* is the best analysis I have seen on the future of energy over the next 100 years." - Grant Reuber, Chairman of the Donner Foundation Panel in awarding Jaccard the \$35,000 prize for best policy book.

"Jaccard makes a strong case that significant fossil fuel use and climate protection can co-exist, without harming economic growth. Read the book and decide for yourself." - David Hawkins, Director, Climate Center, Natural Resources Defense Council.

"Jaccard's well-researched study injects a much-needed dose of reality into the discussion of a 'sustainable' energy system." – Professor Jake Jacoby, MIT

"Mark Jaccard skillfully makes the case that those who leave modifying the way we use fossil fuels out of any plan to achieve 'sustainability' in our energy systems surely confuse means with ends." – Professor John Weyant, Stanford