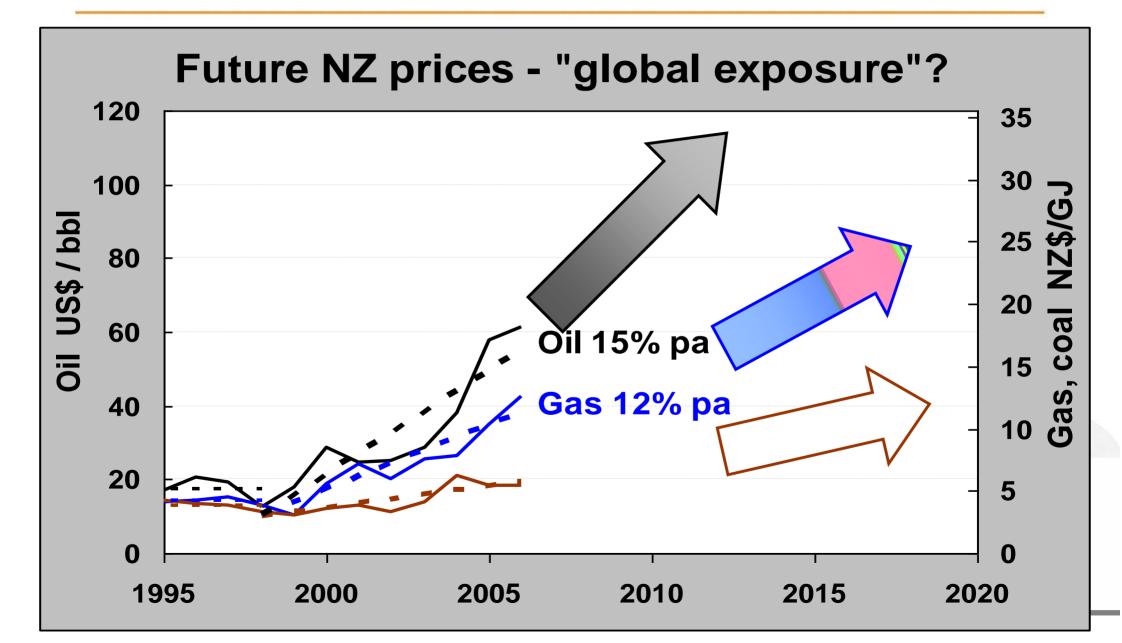
Hopkins Lecture 2006

The economy and energy: are both sustainable?

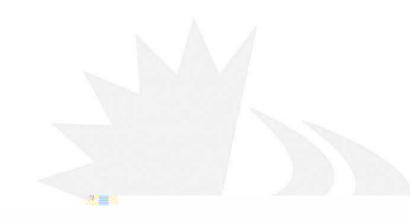
Don Elder

and coal follow?

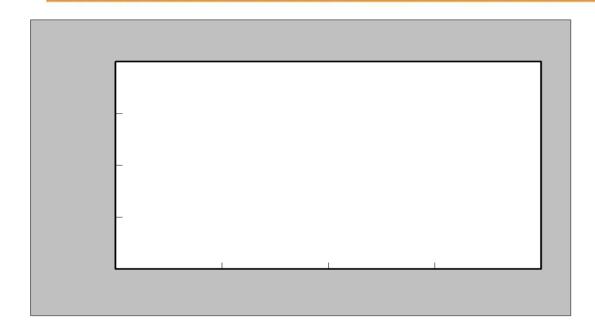


Under any scenario peak conventional oil production is likely between 2006 and 2020 - probably sooner rather than later

Deep oil, heavy oil and oil shale will



Oil prices are driven like all markets - by the point of intersection of demand and supply

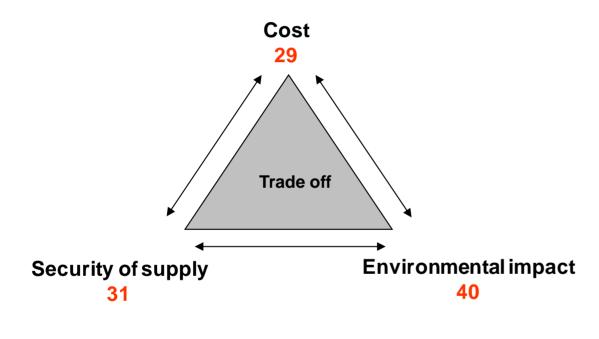


From 1980 to 1993 production capacity exceeded underlying

Since 1998 the rate of underlying demand growth has exceeded the rate

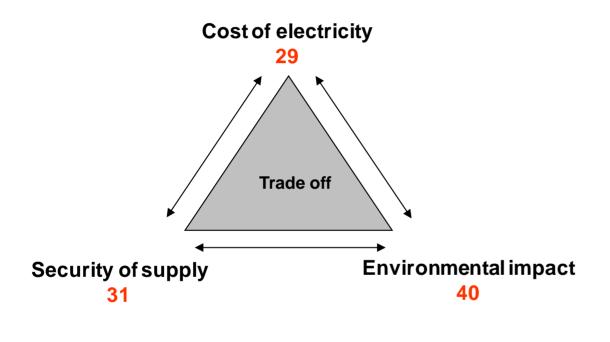
have risen, increasingly steeply

NZers say they rate electricity cost and security evenly, and reduced environmental impact highly





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But only

- 20% would pay ≥\$10/week (8%) for increased security
- 26% would pay <u>></u>\$10/week to reduce environmental impacts

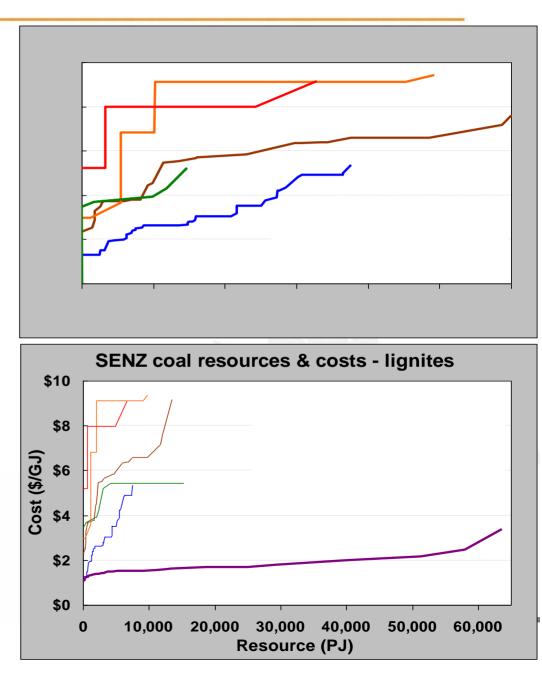
And 59% would not support a carbon tax being passed on to consumers by generators

Can coal be a NZ option?

NZ has the largest per capita thermal coal resource of any country (similar to Australia):

>6,000 PJ in each of 5 regions

50-100,000 PJ lignites <\$3/GJ 150-200,000 PJ <\$5/GJ(??)

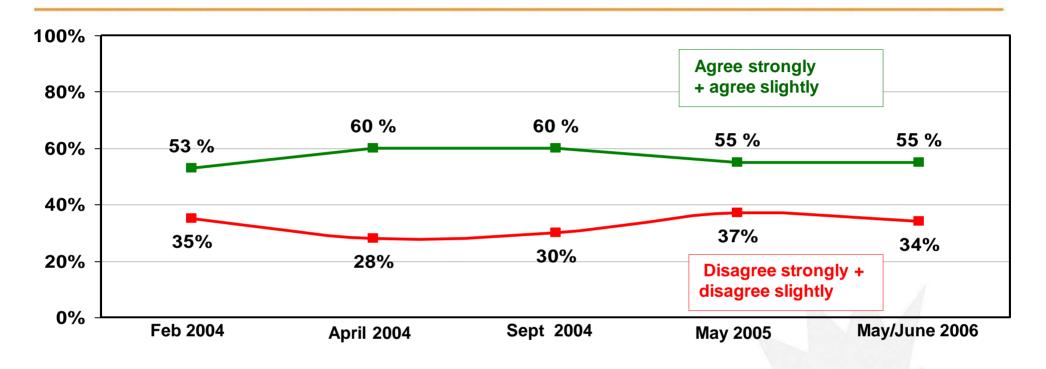




Can coal address all three energy objectives?

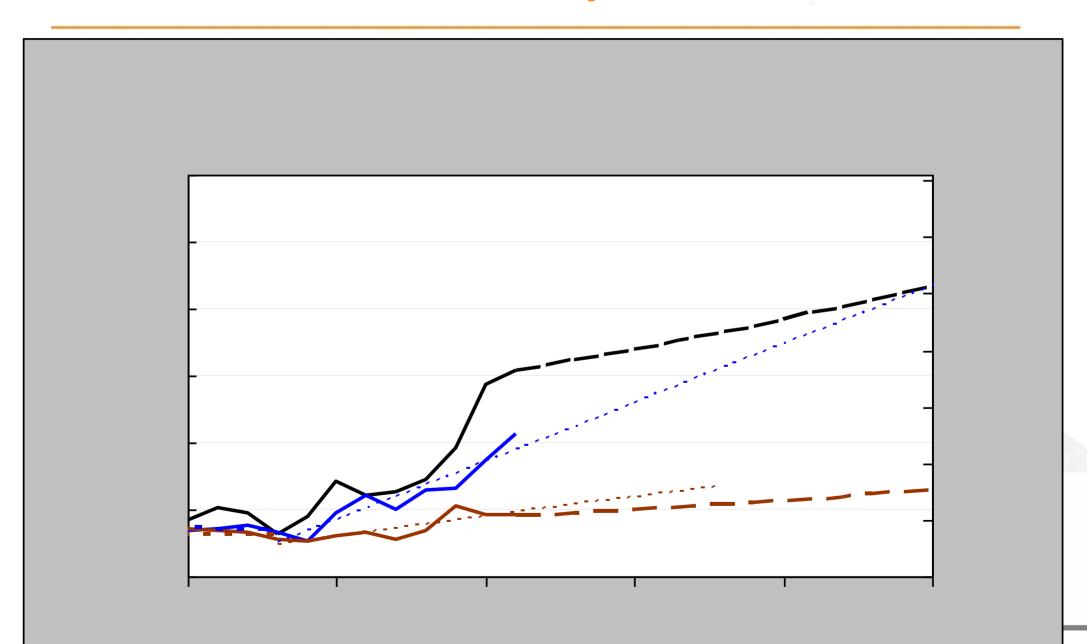


55% of NZers currently think we should be making greater use of our coal resources



- 86 would have a more positive opinion if they knew technology was being used to reduce pollutant gases from power stations
- 72% would have a more positive opinion if they knew CO₂ capture and storage technology could be used within 10-

Our coal resources can offer energy security for <u>all</u> fuels and economic security for centuries



Technology based approach to climate change

Price based measures in the short term:

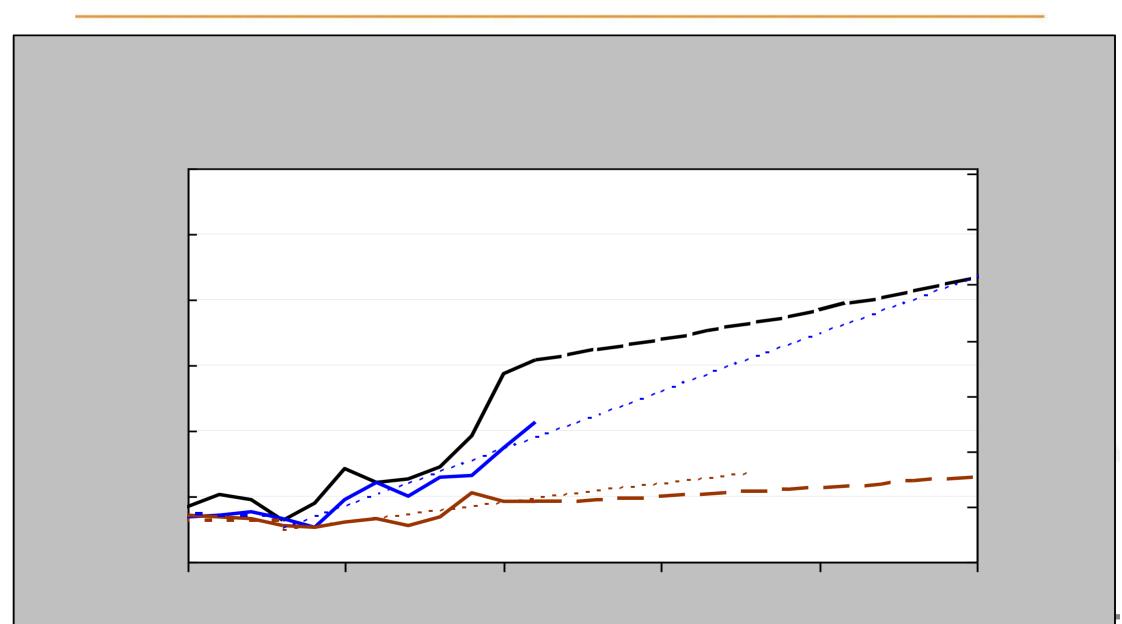
- <u>will not</u> incentivise investment in technology R&D
- will reduce economic growth

R & D is critical

NZ could lead the way in agricultural methane emissions
Ø No mainstream country has significant investment earmarked for agricultural methane R & D

Technology transfer will be critical for NZ

Our coal resources can offer energy security for <u>all</u> fuels and economic security for centuries



over 80% were supportive

Had heard/read anything about granting a Think outcome is reasonable Wildlife Permit to move snails Don knov 4% Definitely No Definitely No 32% Yes 17% 33% **Probably** No 14% Yes 68% **Probably** Yes 32% (A) 🚍

Of those who did not think the outcome was reasonable, over half thought it was a waste of time/money etc