

Trucking Future(s):

Planning for Peak Oil & Climate Change

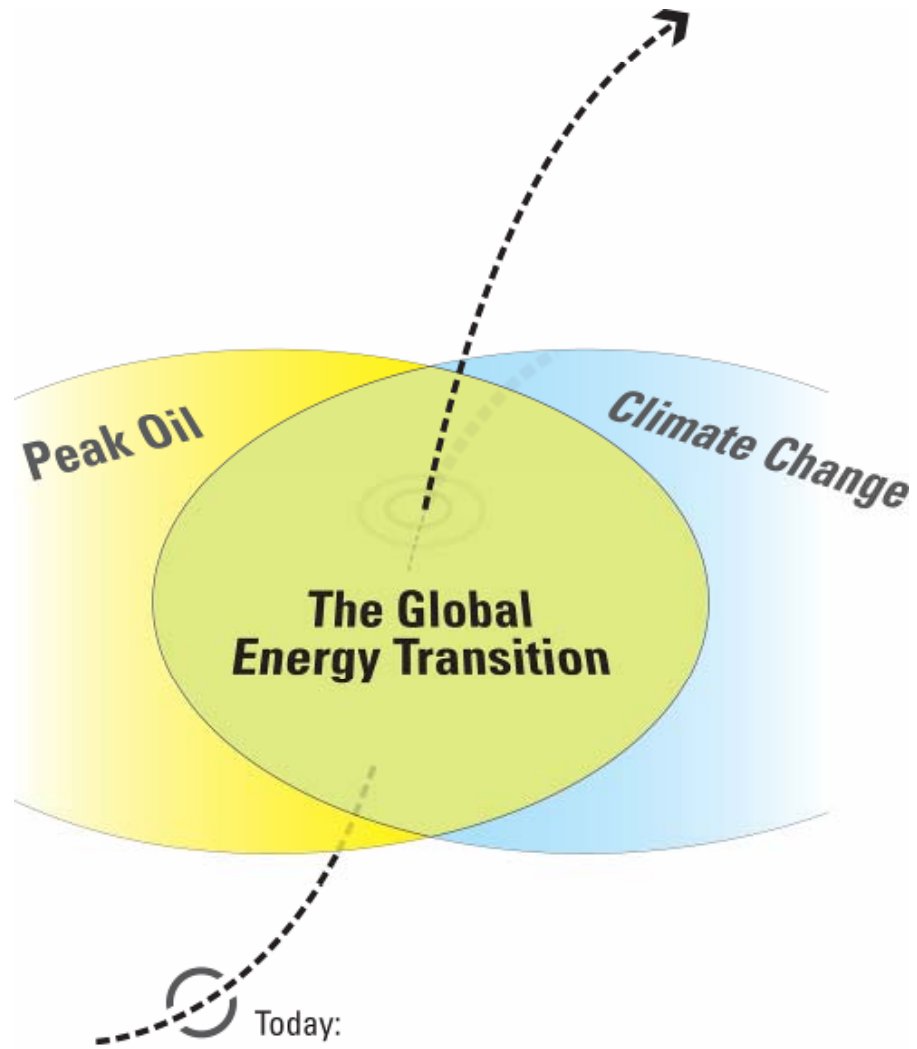
April 2009

Bryn Davidson

B.Eng. M.Arch. MRAIC LEED-AP

Executive Director





Wake up!!!

We are here



Peak Oil

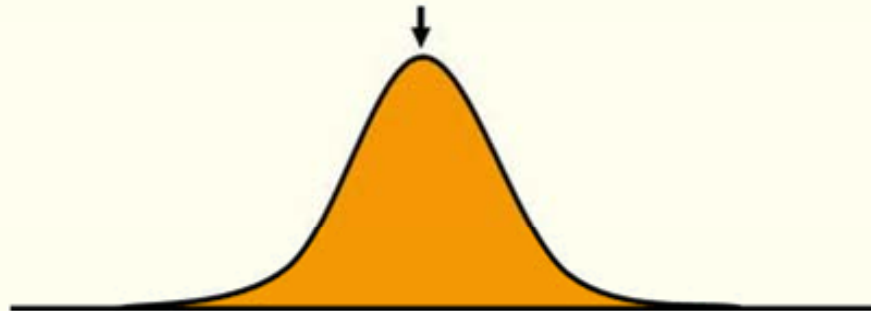
www.oilcrisis.com



www.dynamiccities.org

Wake up!!!

We are here



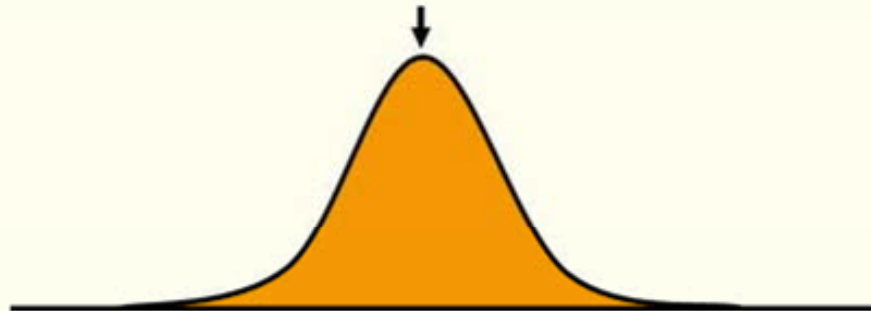
Peak Oil

www.oilcrisis.com



Wake up!!!

We are here



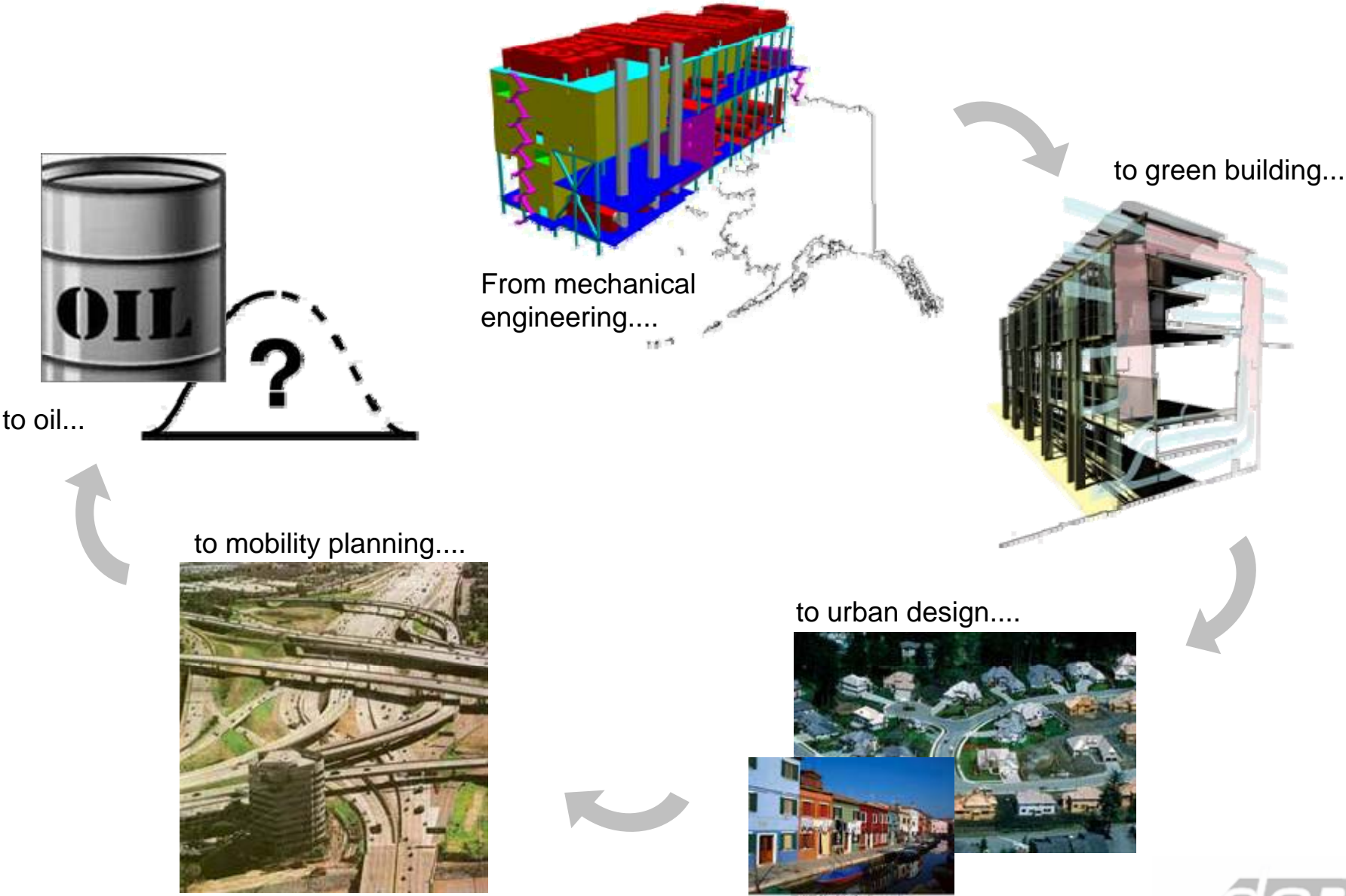
Peak Oil

www.oilcrisis.com



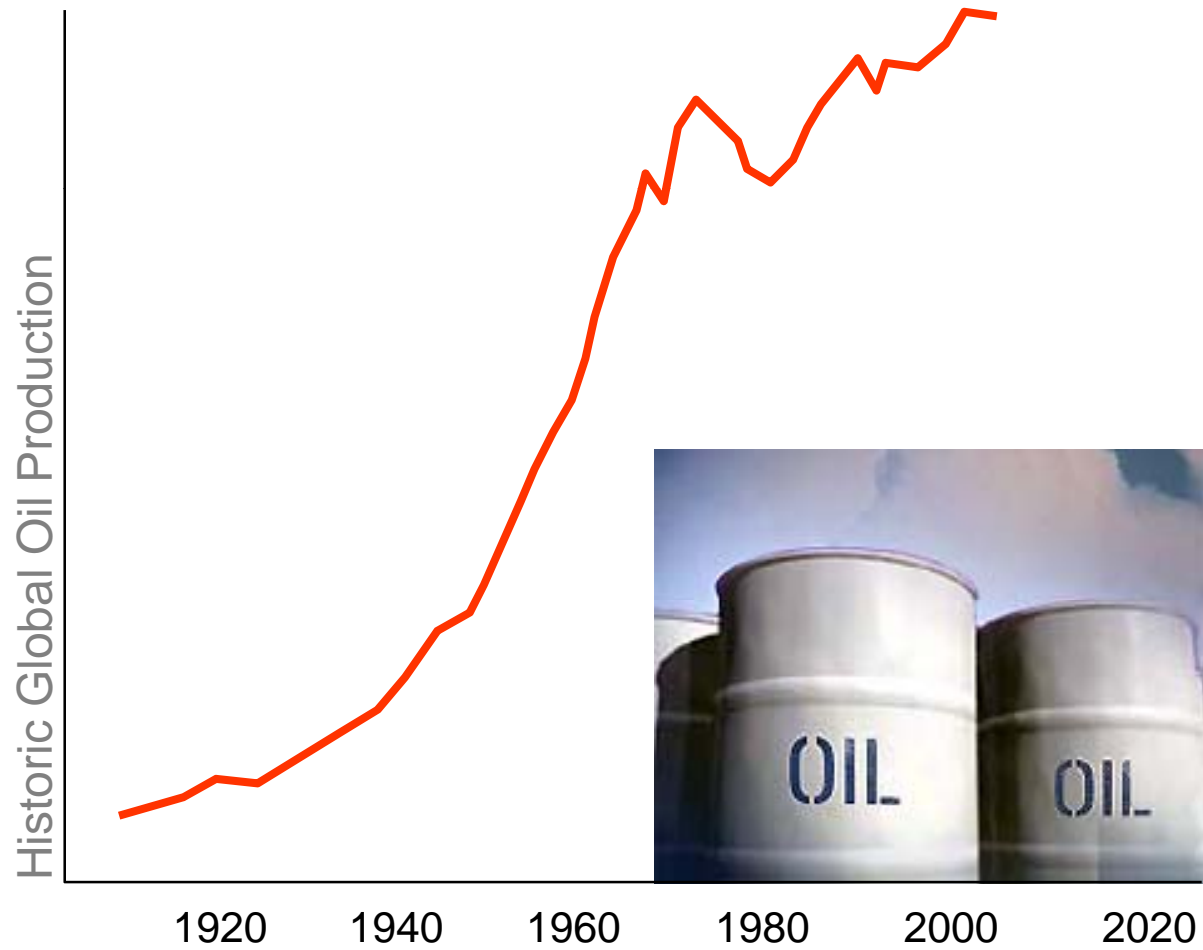
The real reason I started speaking about peak oil...
...all the great merchandise!

How I ended up talking about oil...



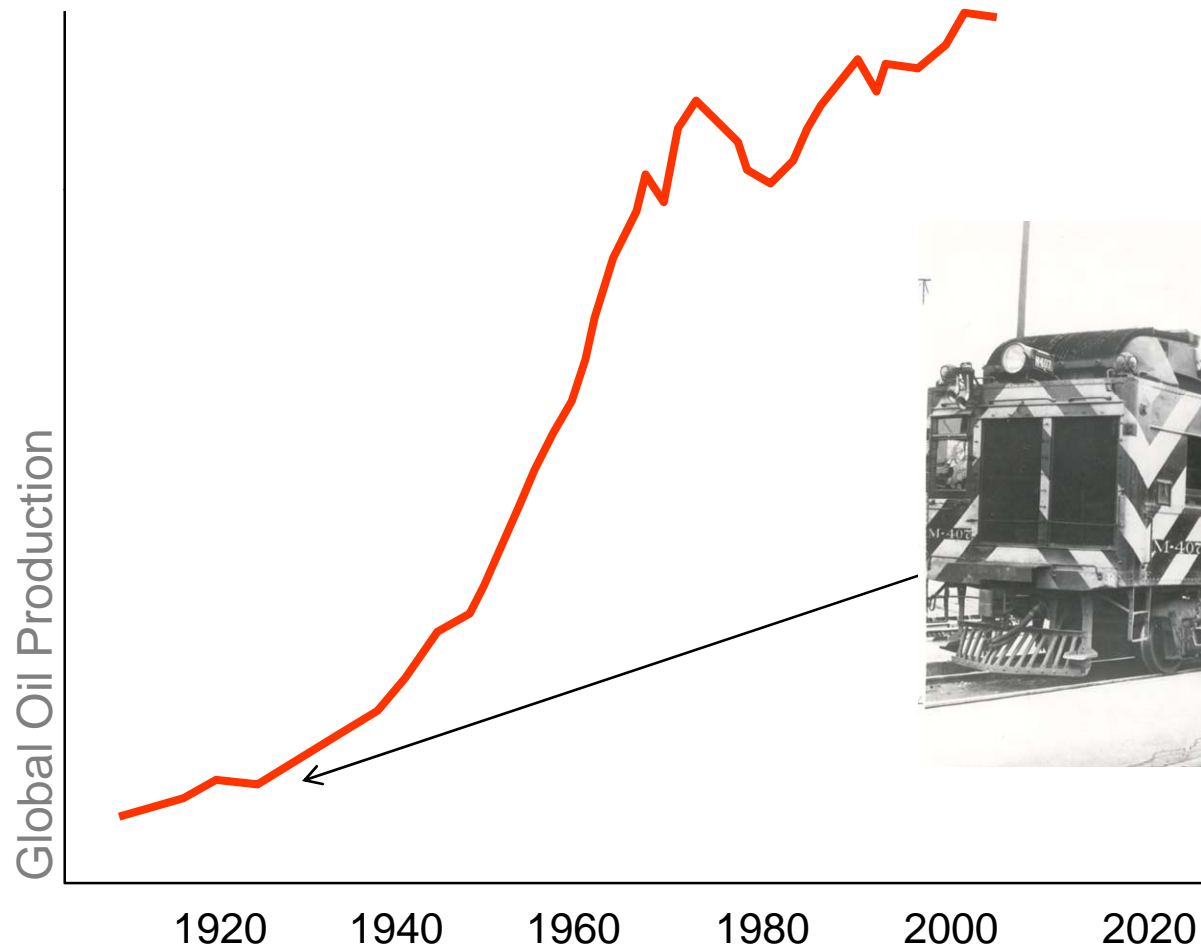


What future are you planning for?



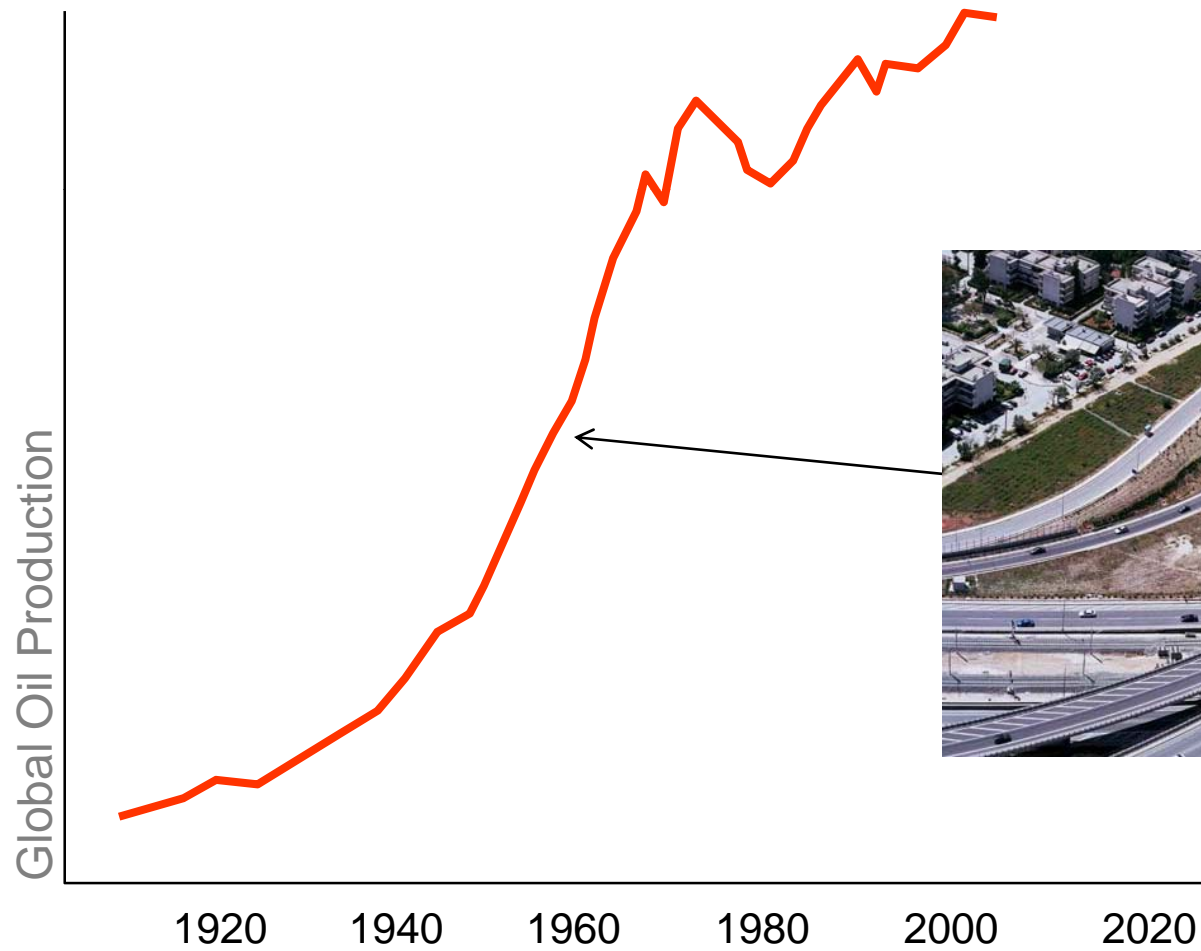


What future are you planning for?



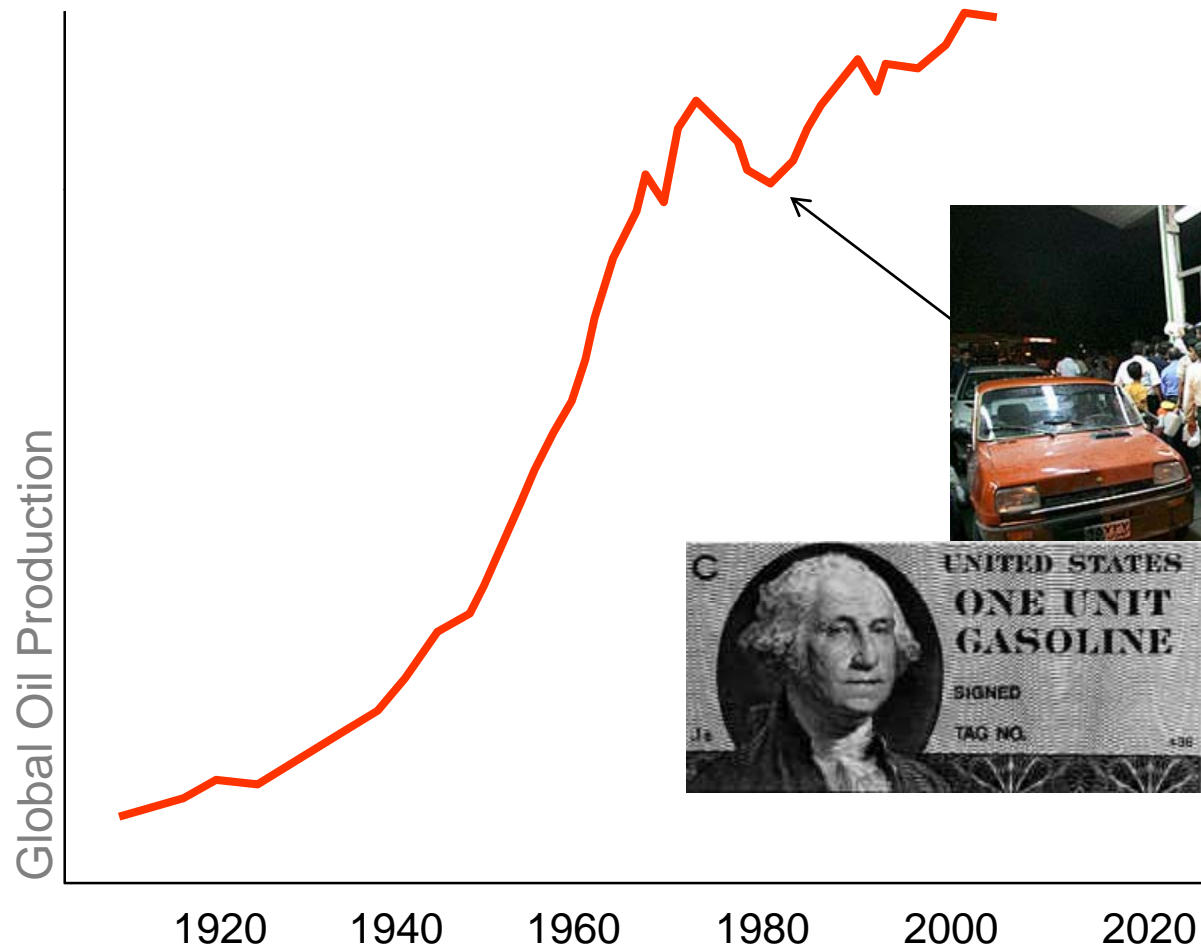


What future are you planning for?



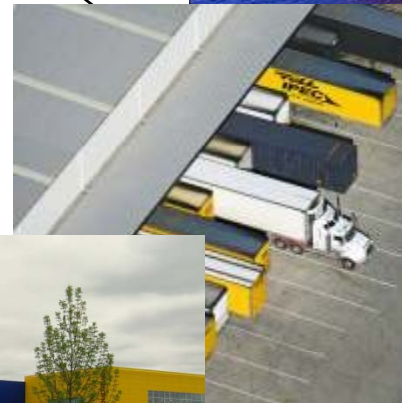
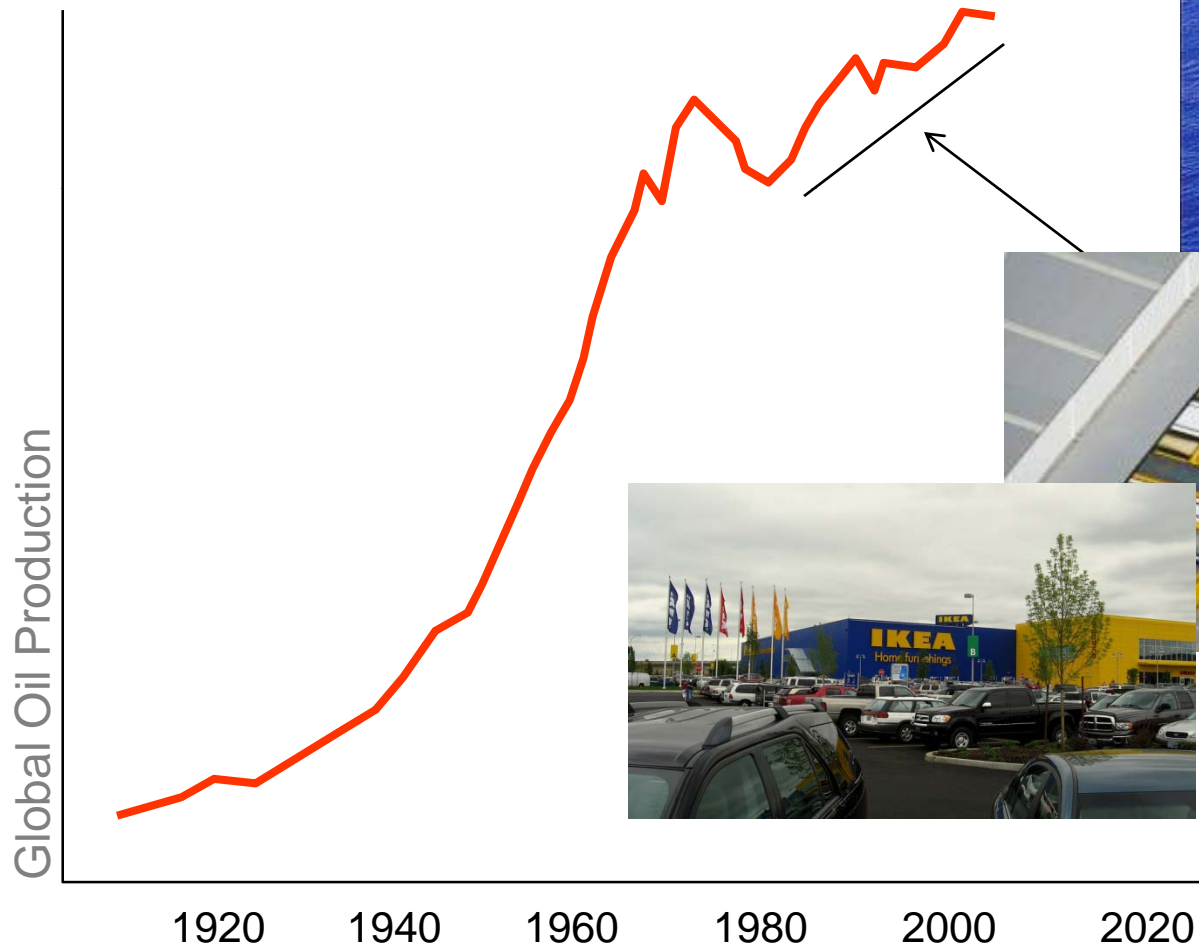


What future are you planning for?



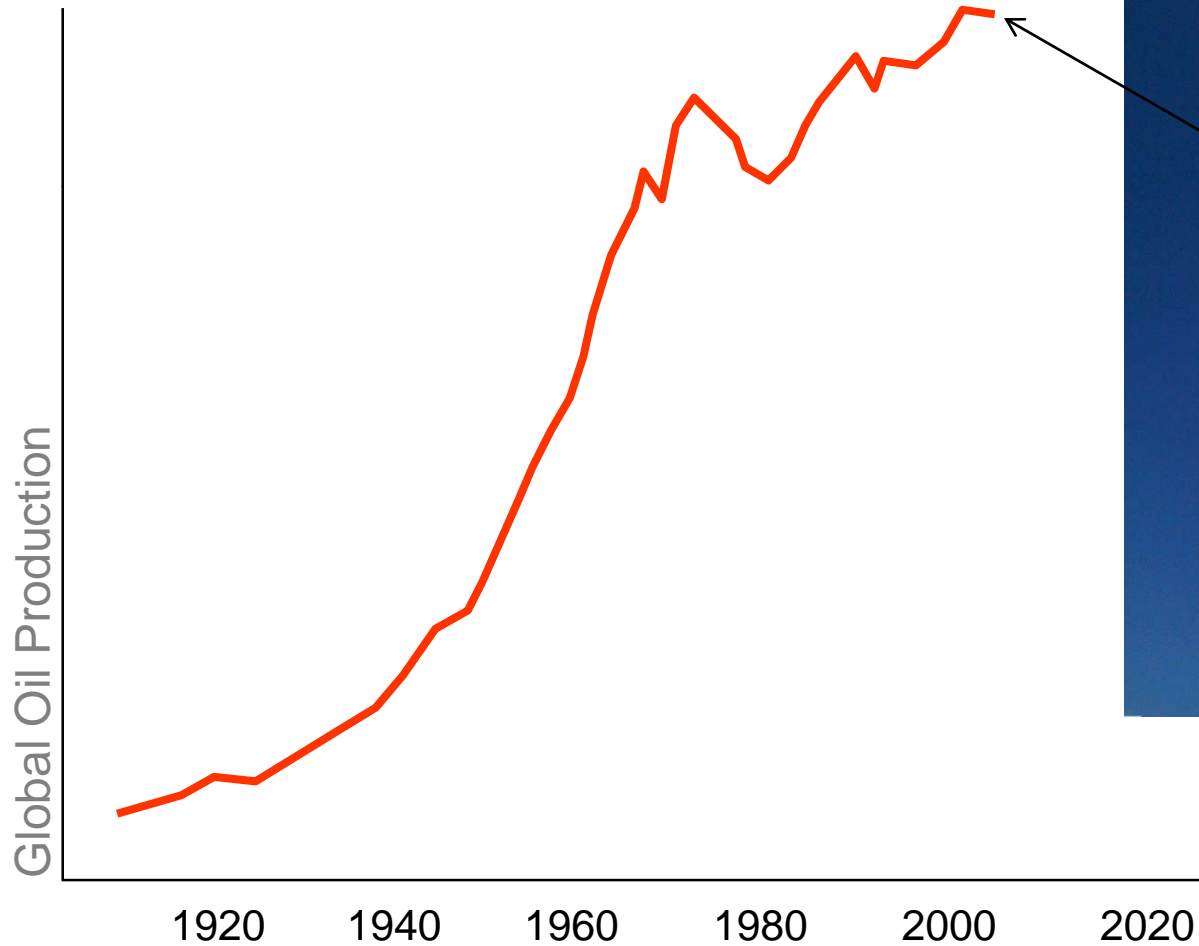


What future are you planning for?





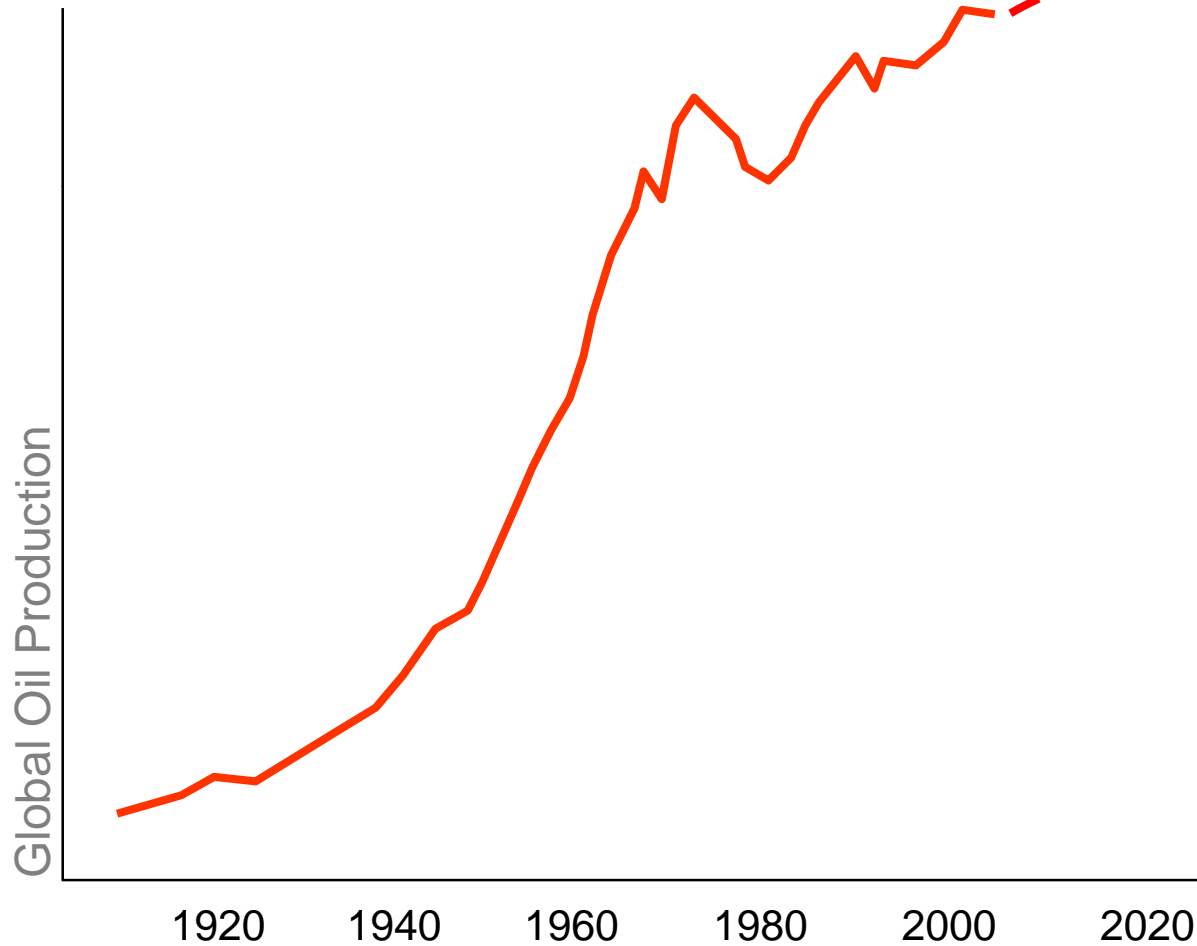
What future are you planning for?





What future are you planning for?

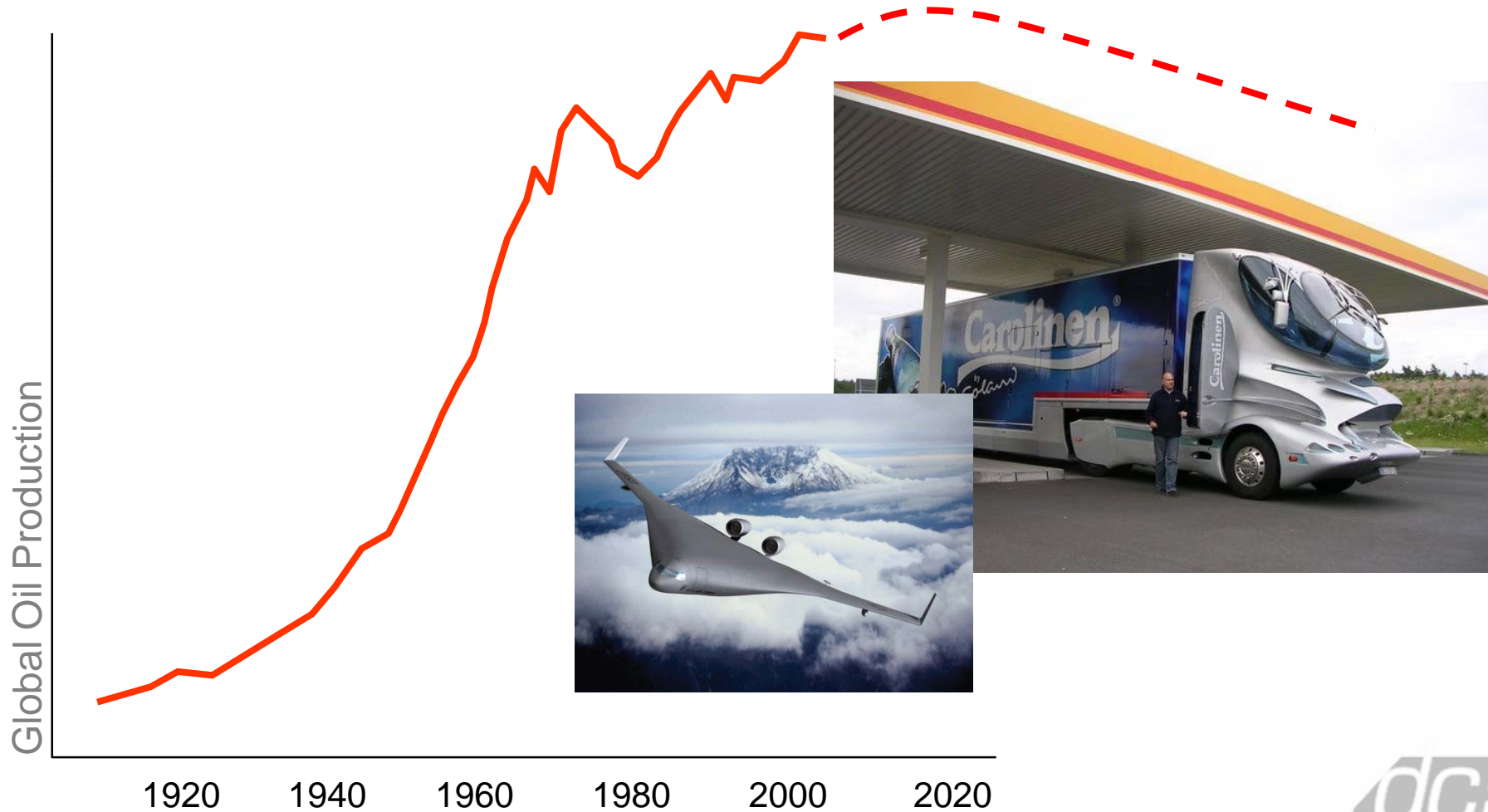
Future 1:
Slower Oil Depletion +
Emerging Carbon Constraints





What future are you planning for?

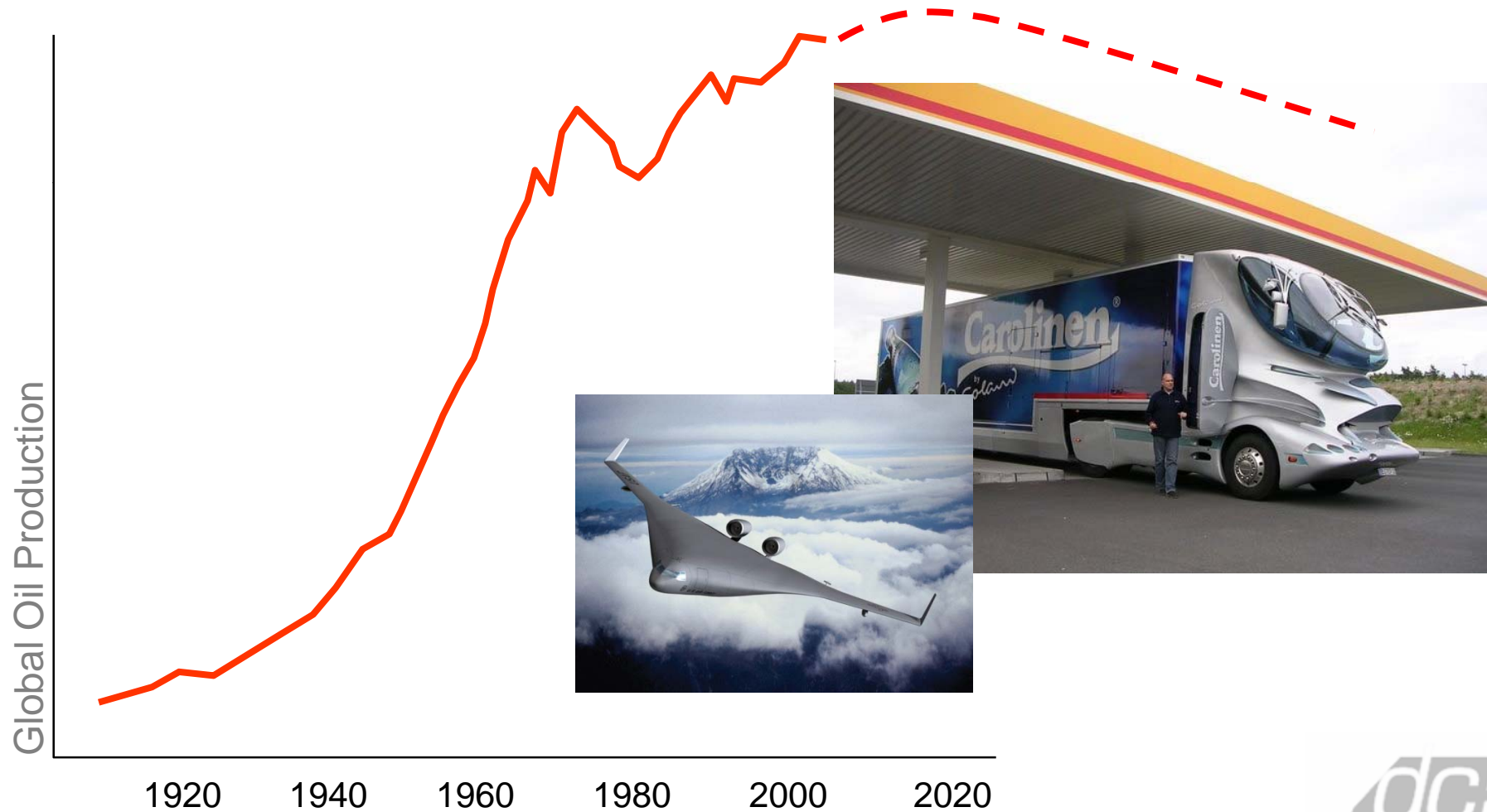
Future 1:
Slower Oil Depletion +
Emerging Carbon Constraints





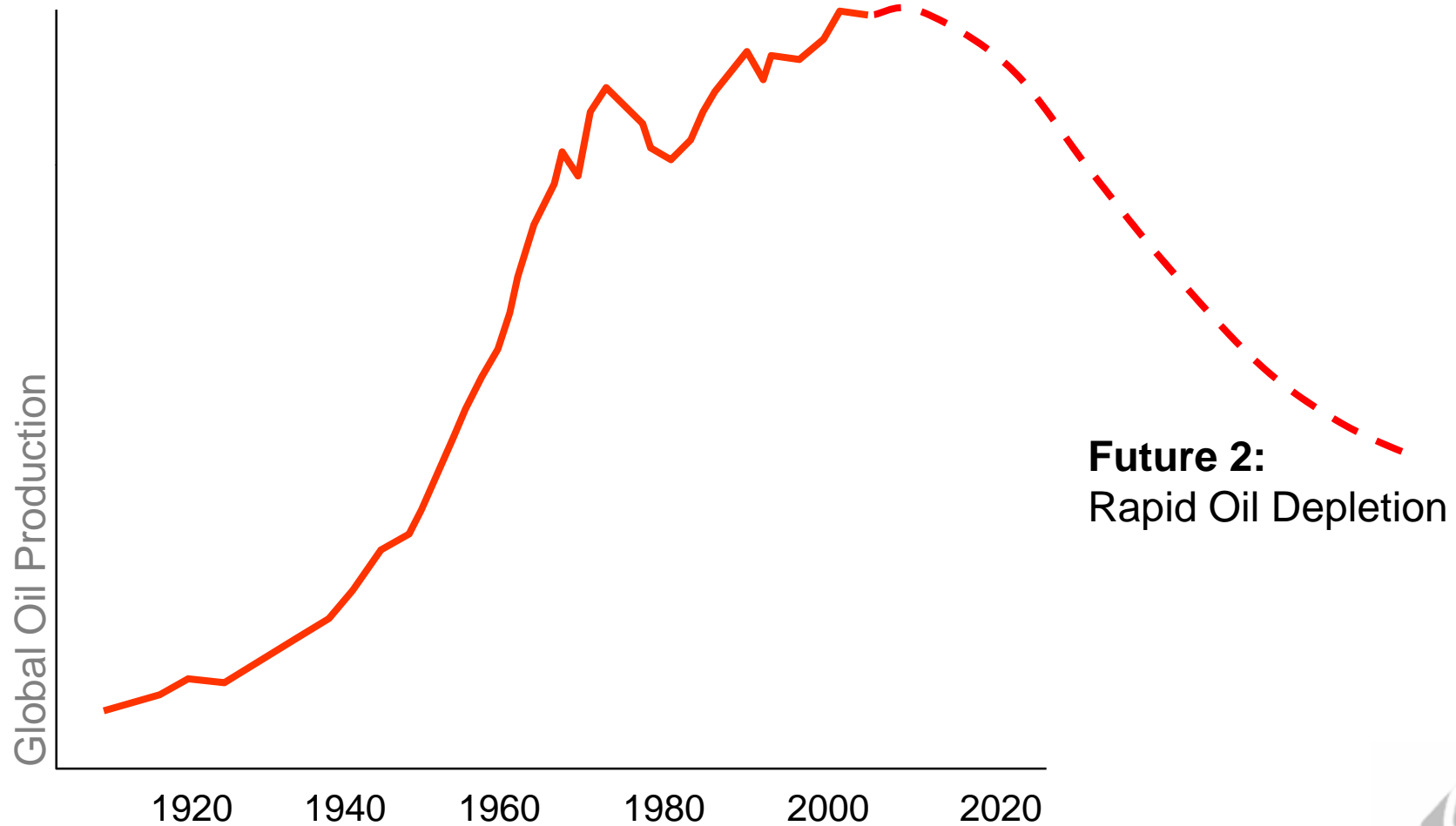
What future are you planning for?

Future 1:
'Techno-Markets'





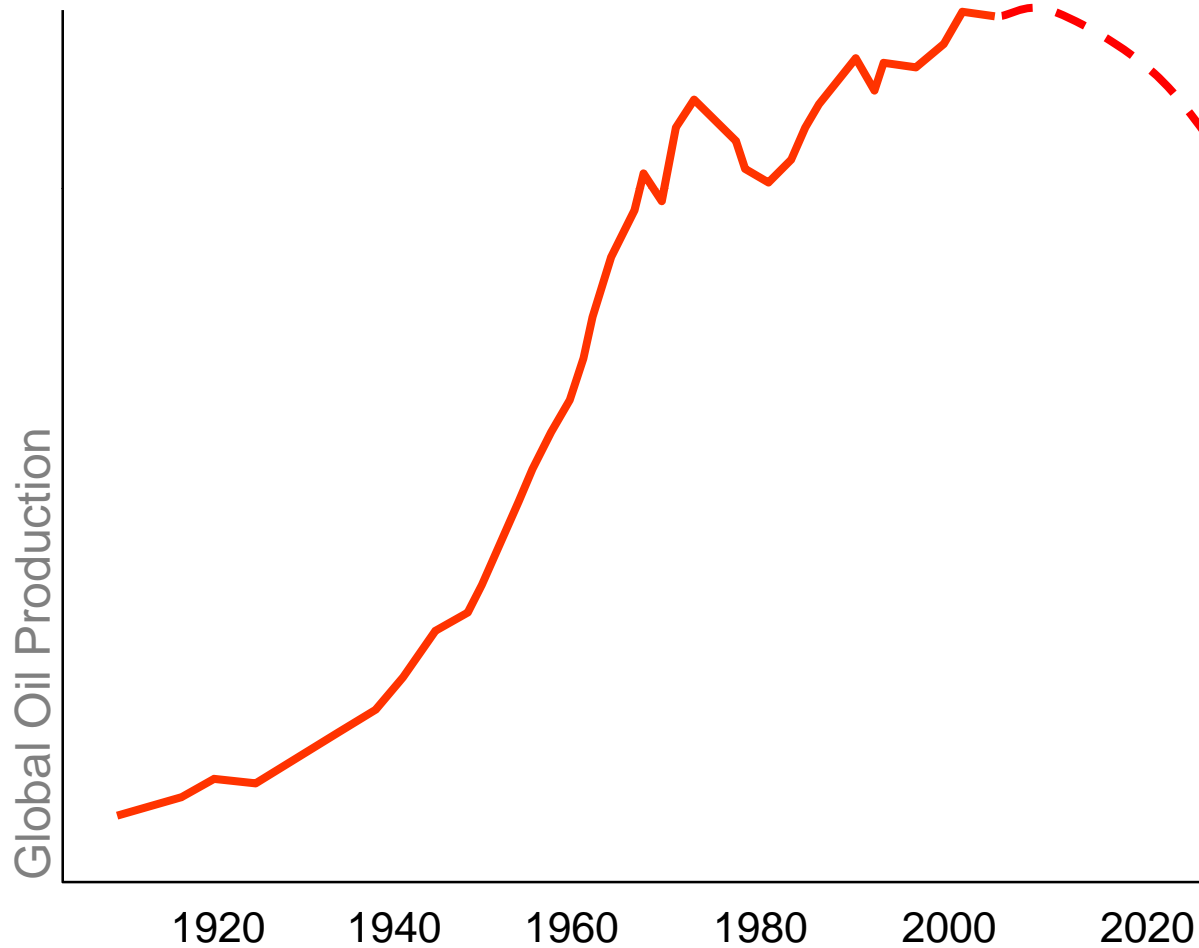
What future are you planning for?



Future 2:
Rapid Oil Depletion



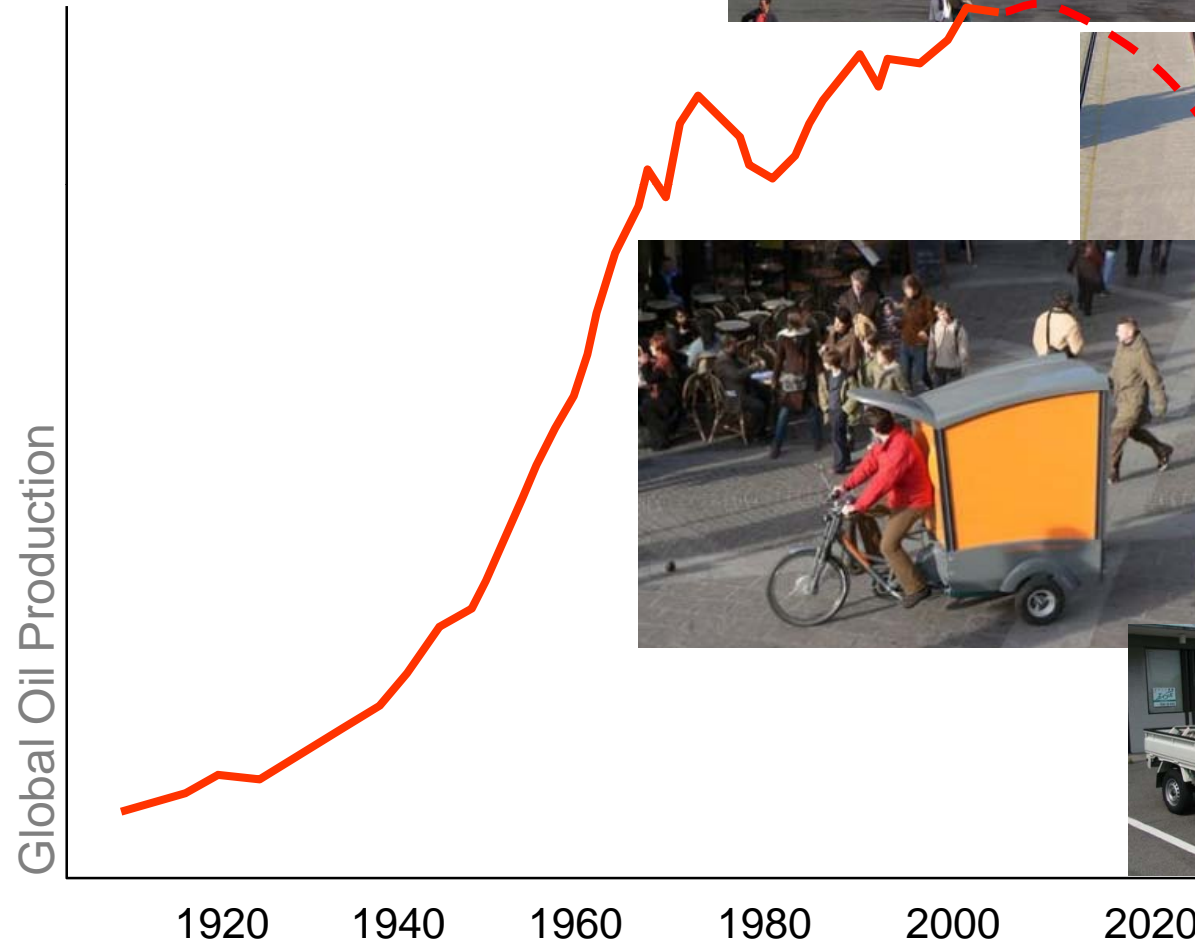
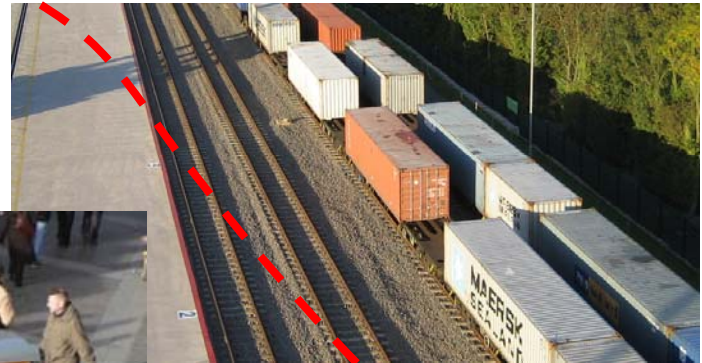
What future are you planning for?



Future 2:
Rapid Oil Depletion



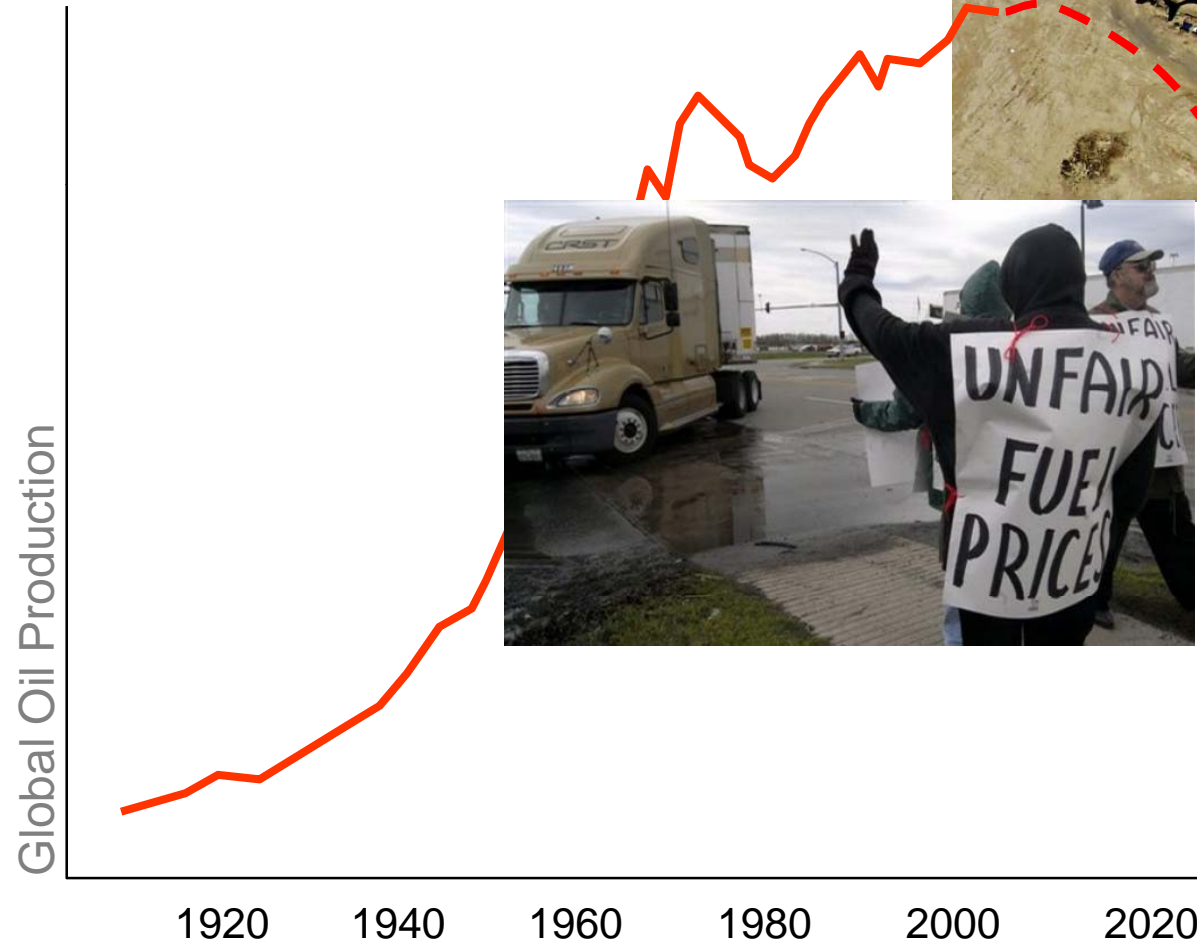
What future are you planning for?



Future 2:
Rapid Oil Depletion



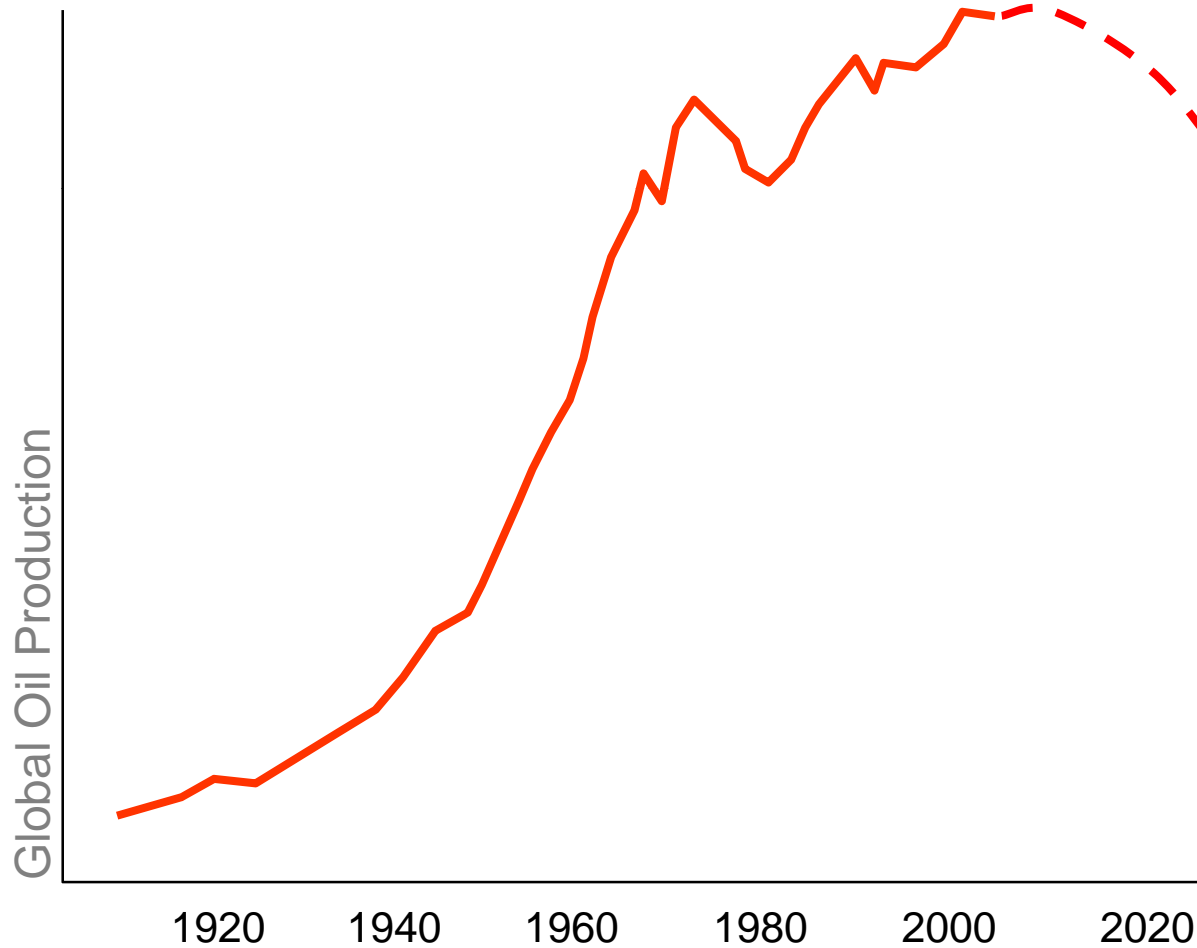
What future are you planning for?



Future 2:
'Lean and Local'



What future are you planning for?



Future 2:
'Lean and Local'

**Can this happen?
Is it likely?**

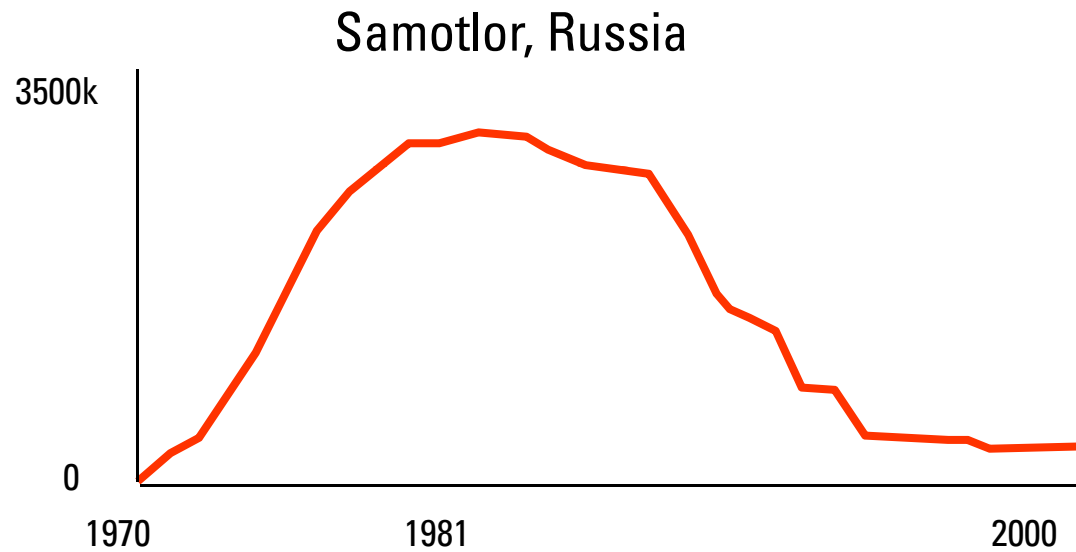
Understanding Peak Oil:

Giant Oil Fields Peak and Decline



Understanding Peak Oil:

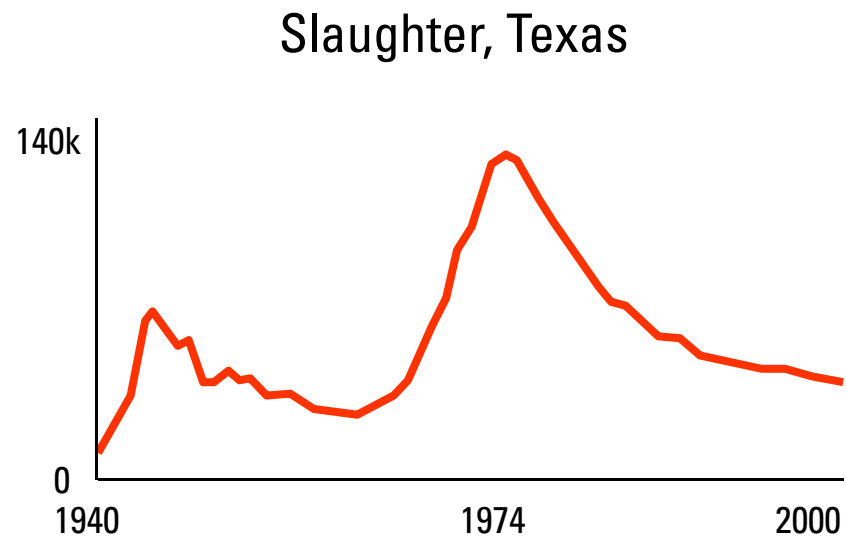
- Giant Fields Peak and Decline



* production curves excerpted from a presentation by Matt Simmons

Understanding Peak Oil:

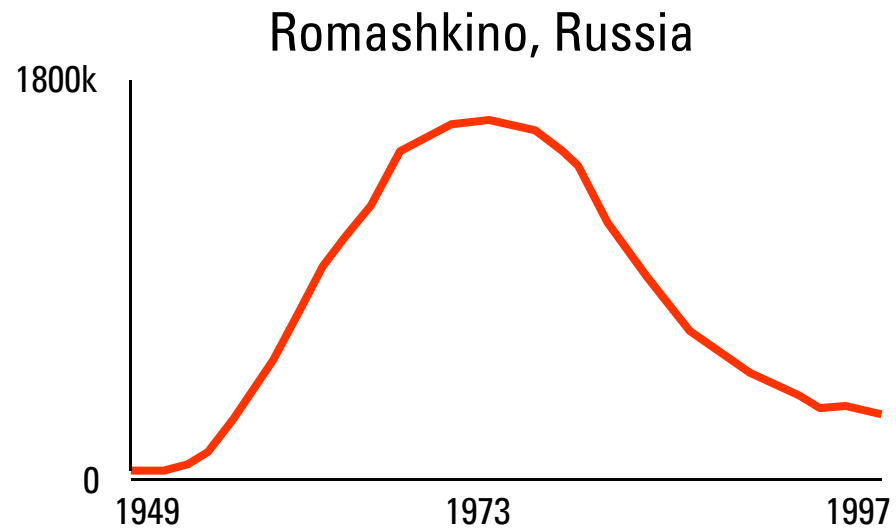
- Giant Fields Peak and Decline



* production curves excerpted from a presentation by Matt Simmons

Understanding Peak Oil:

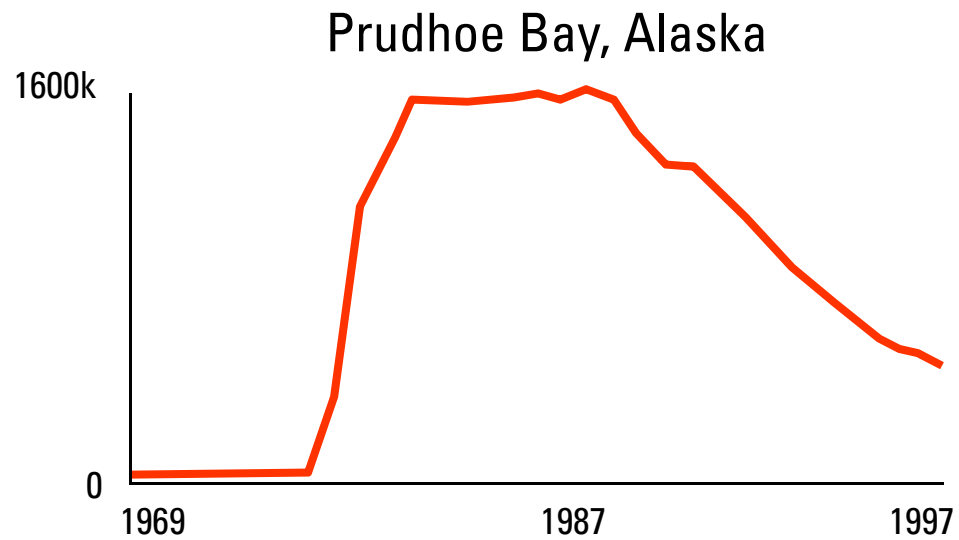
- Giant Fields Peak and Decline



* production curves excerpted from a presentation by Matt Simmons

Understanding Peak Oil:

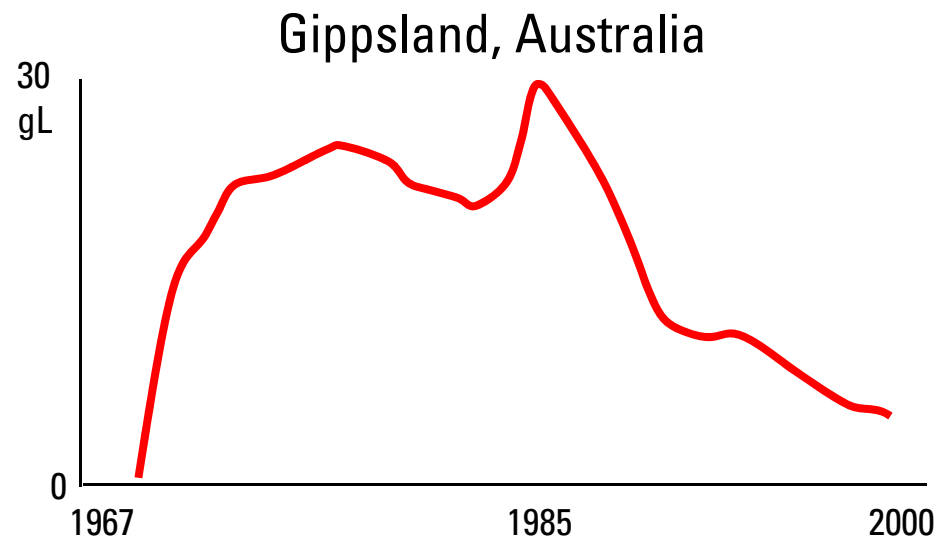
- Giant Fields Peak and Decline



* production curves excerpted from a presentation by Matt Simmons

Understanding Peak Oil:

- Giant Fields Peak and Decline



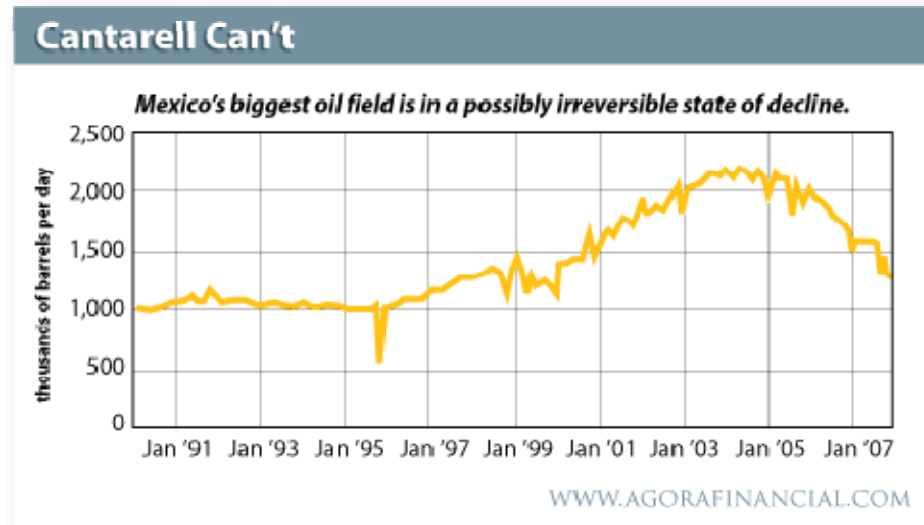
Gippsland field profile adapted from ASPO-Australia.

Understanding Peak Oil:

- Giant Fields Peak and Decline

Cantarell, Mexico

World's 3rd Largest Oil Field

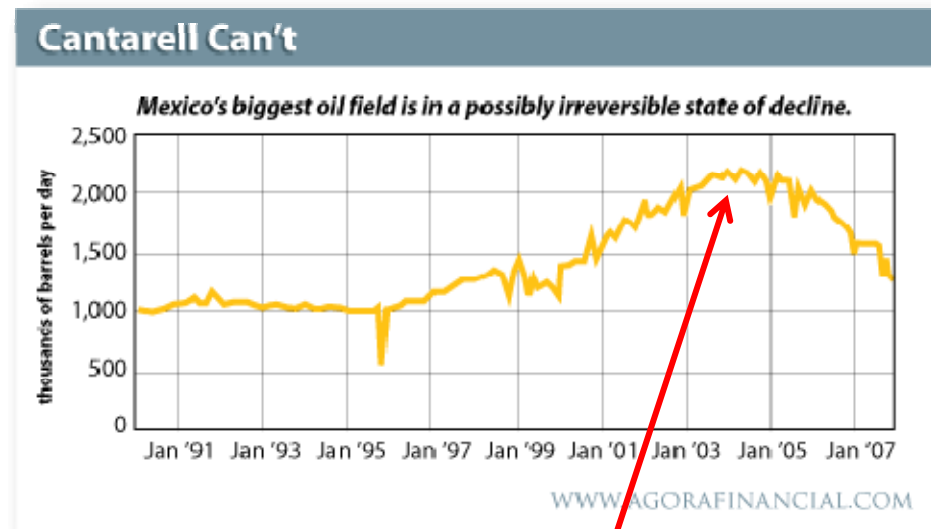


Understanding Peak Oil:

- Giant Fields Peak and Decline

Cantarell, Mexico

World's 3rd Largest Oil Field



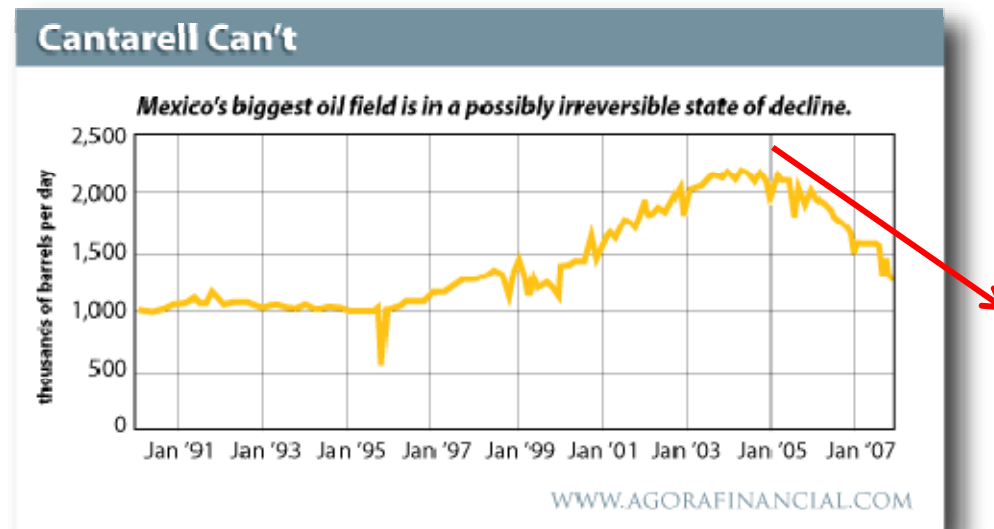
Peaked in 2004

Understanding Peak Oil:

- Giant Fields Peak and Decline

Cantarell, Mexico

World's 3rd Largest Oil Field

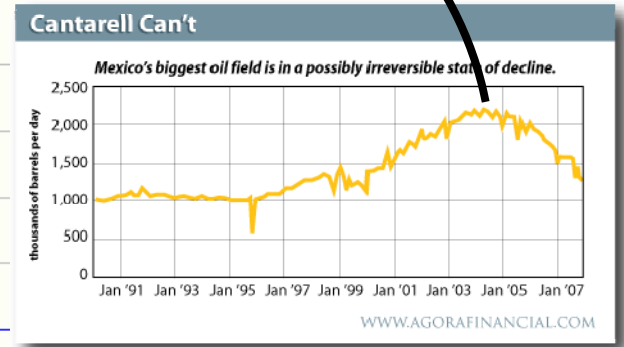
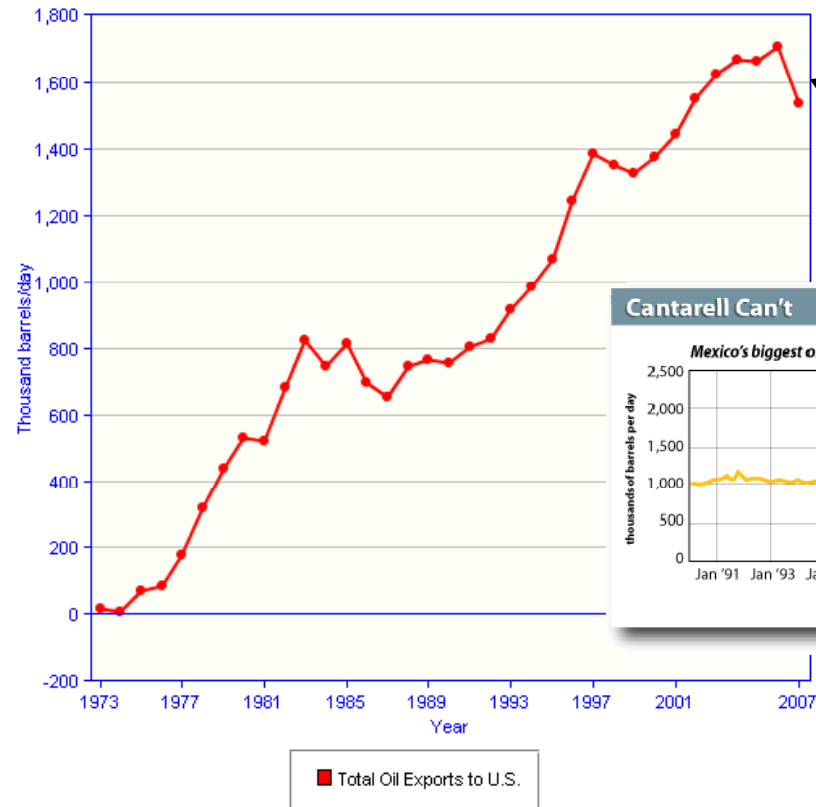


~8-10% Annual Rate of Depletion
(along the 'worst case scenario' path)

Understanding Peak Oil:

- Giant Fields Peak and Decline

Mexico Oil Exports to the U.S.



Understanding Peak Oil:

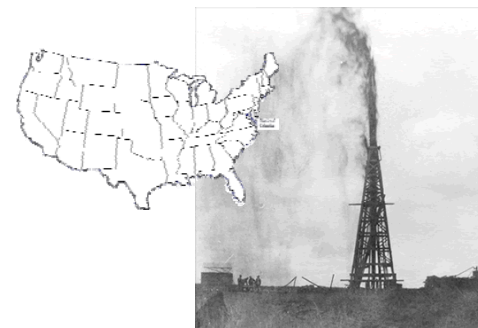
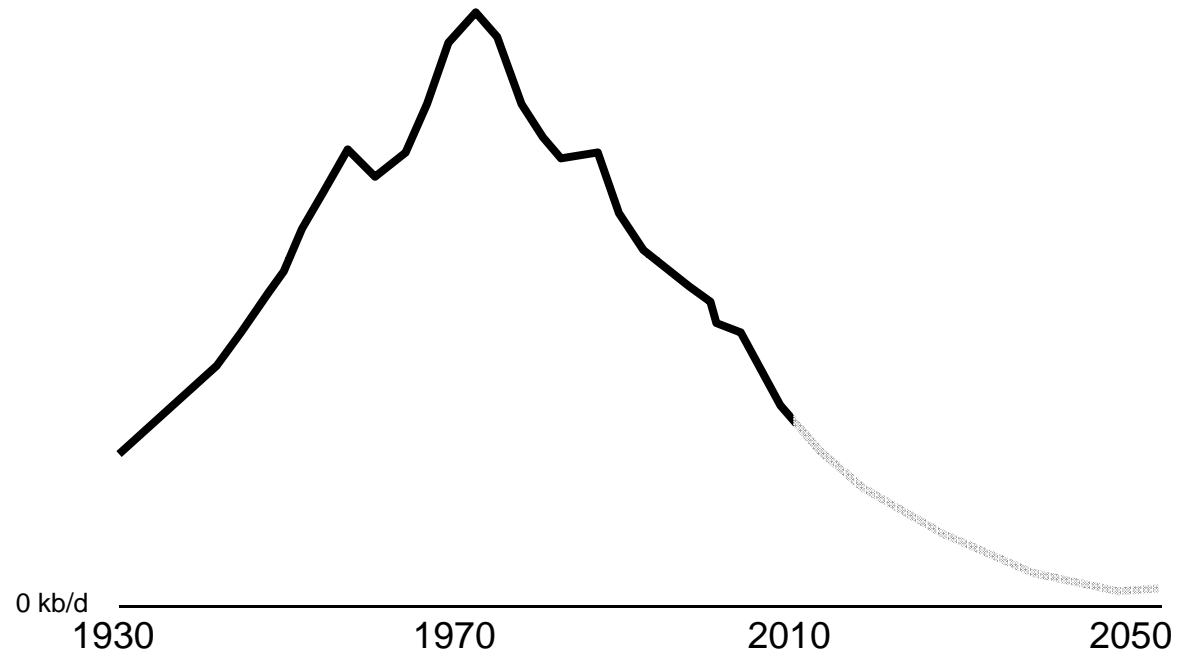
Technology has limits...



Understanding Peak Oil:

- Giant Fields Peak and Decline
- Technology has limits...

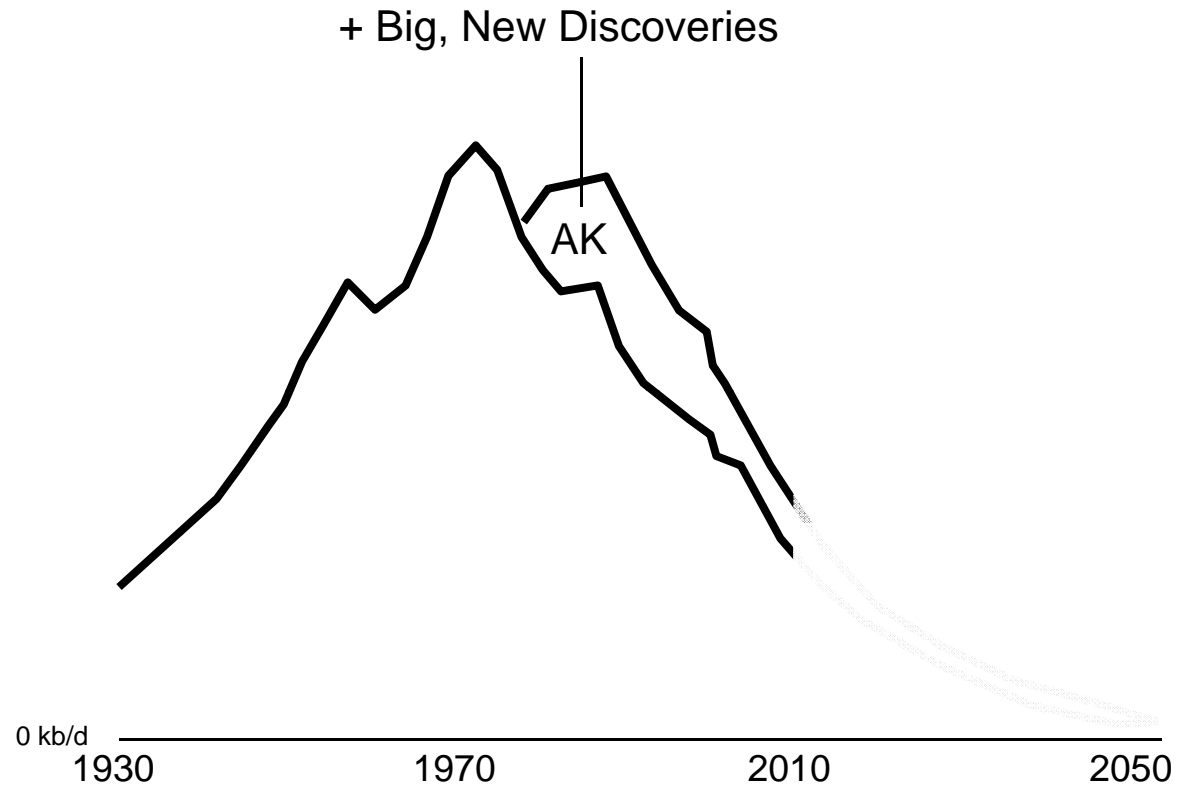
Oil Production, US Lower 48



Understanding Peak Oil:

- Giant Fields Peak and Decline
- Technology has limits...

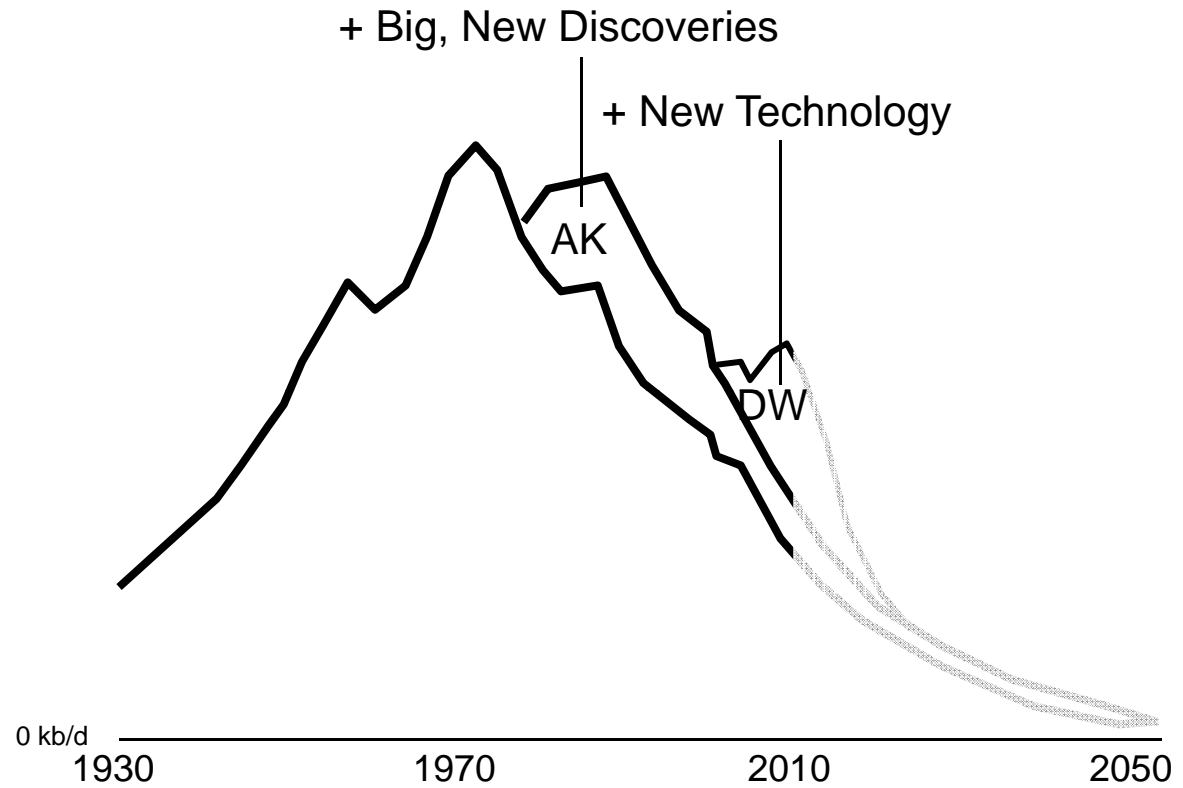
Oil Production, US Lower 48



Understanding Peak Oil:

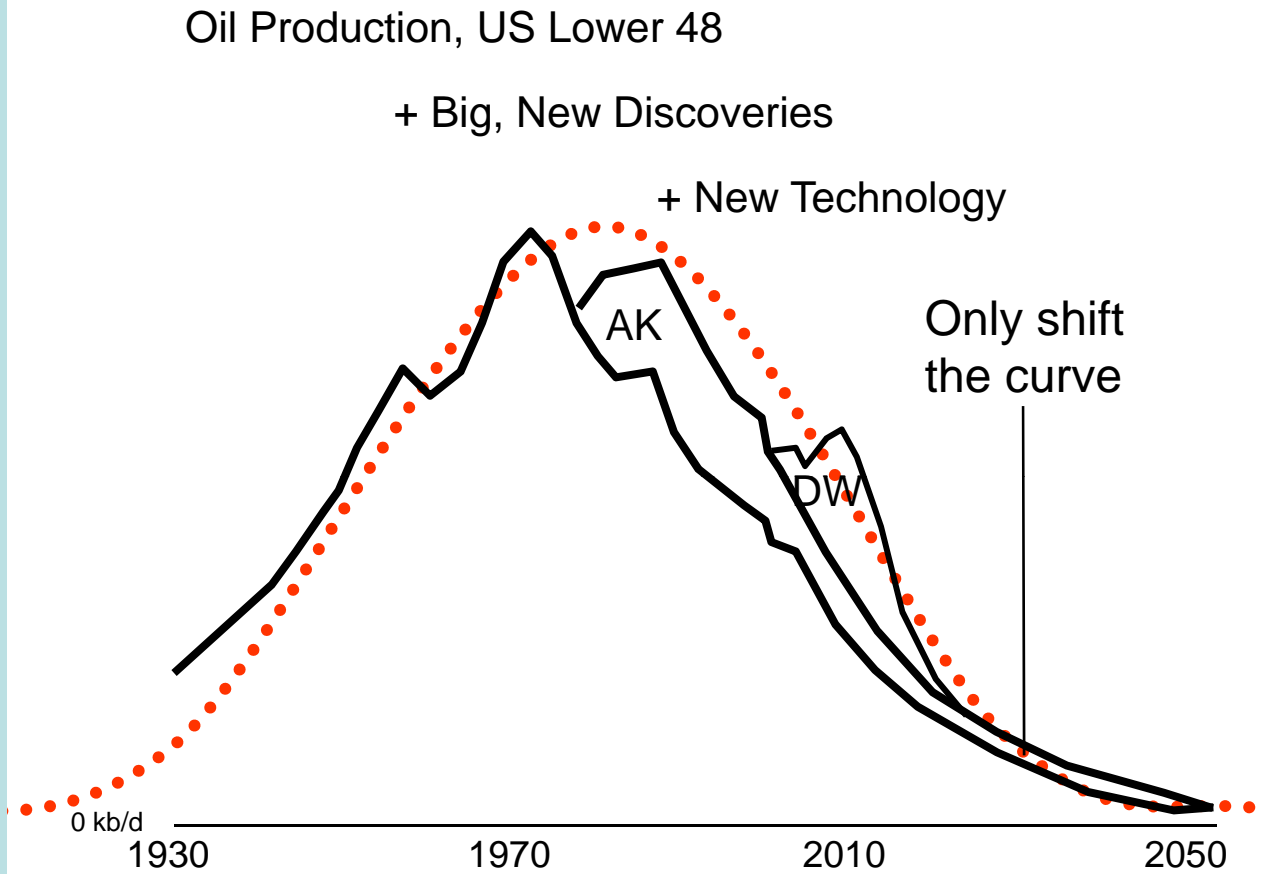
- Giant Fields Peak and Decline
- Technology has limits...

Oil Production, US Lower 48



Understanding Peak Oil:

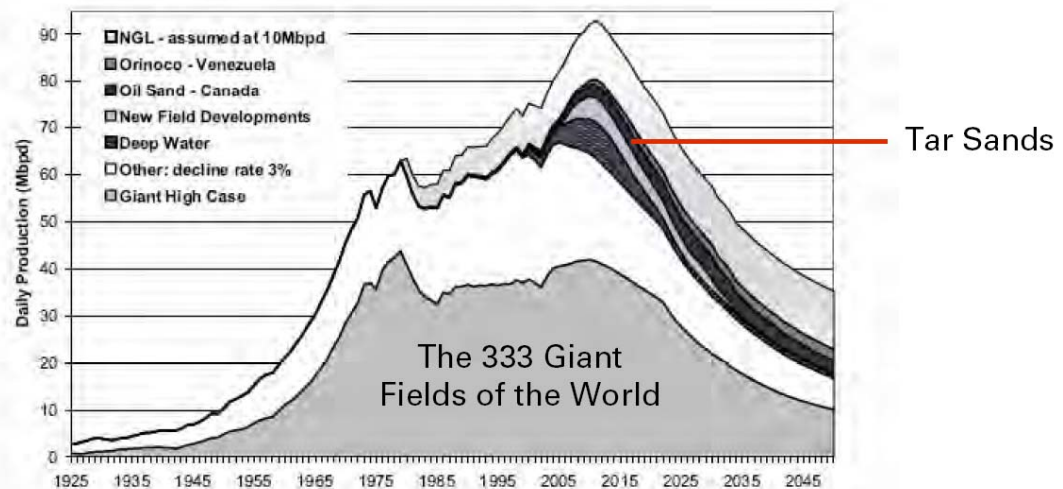
- Giant Fields Peak and Decline
- Technology has limits...



Understanding Peak Oil:

- Giant Fields Peak and Decline
- Technology has limits...

- 'Peak Oil' is about *flows*, not *reserves*.
- Resources like tar sands have giant reserves but *flows* are highly constrained compared to conventional oil.



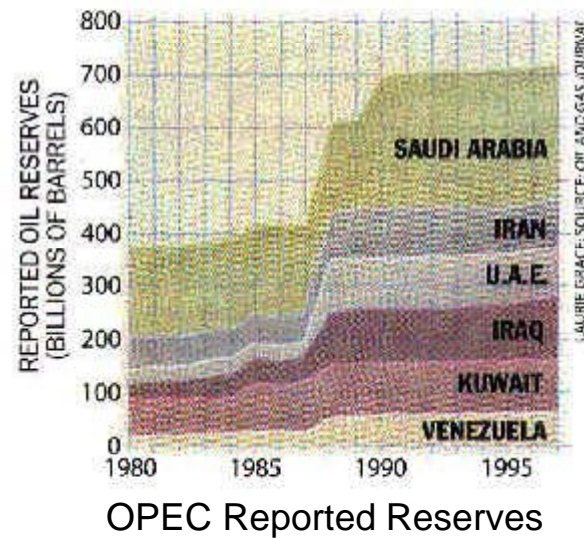
Understanding Peak Oil:

The data is poor, or intentionally manipulated



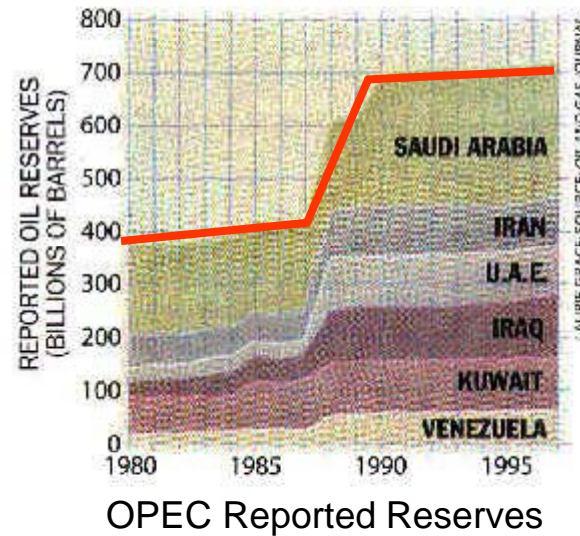
Understanding Peak Oil:

- Giant Fields Peak and Decline
- Technology has limits...
- Data is poor, or intentionally manipulated



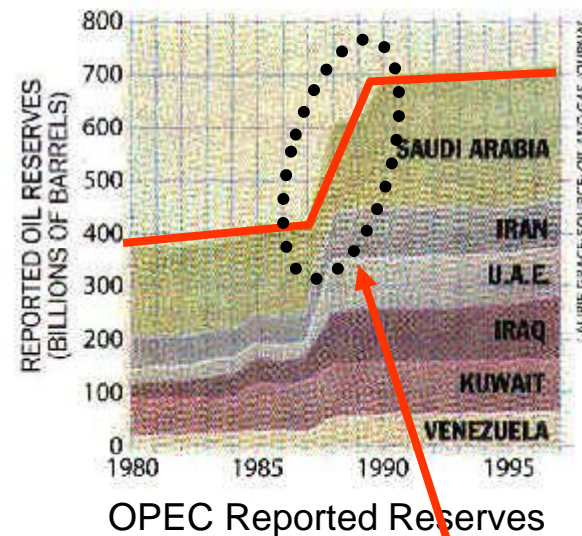
Understanding Peak Oil:

- Giant Fields Peak and Decline
- Technology has limits...
- Data is poor, or intentionally manipulated



Understanding Peak Oil:

- Giant Fields Peak and Decline
- Technology has limits...
- Data is poor, or intentionally manipulated

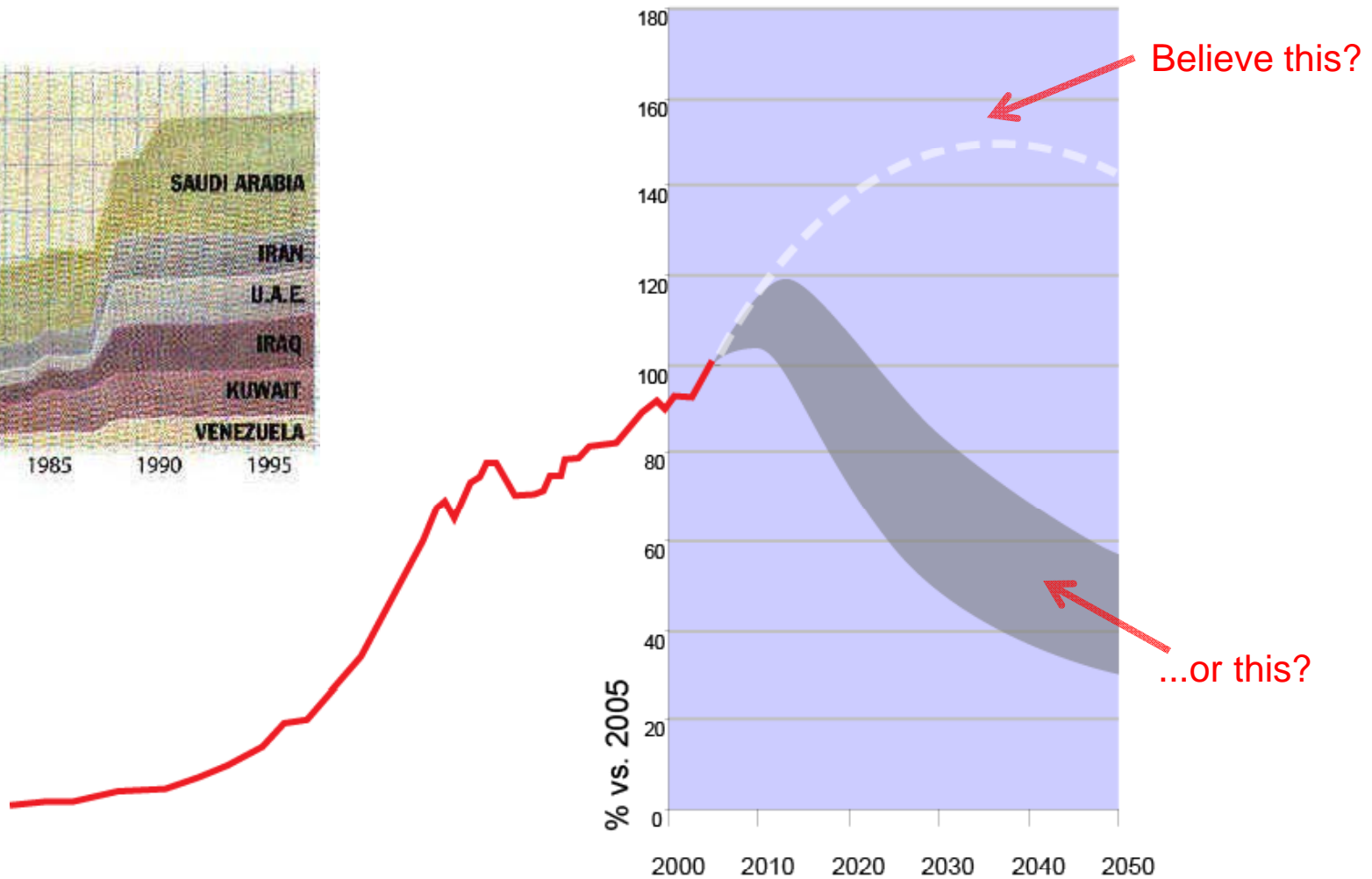
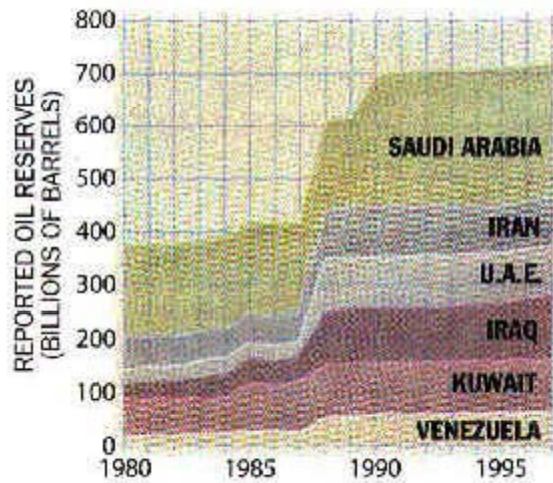


In the late 80s OPEC Rules Changed :

The More Reserves You Have

> > More Pumping Allowed = More \$\$\$

Future Availability of Oil-Based Fuels



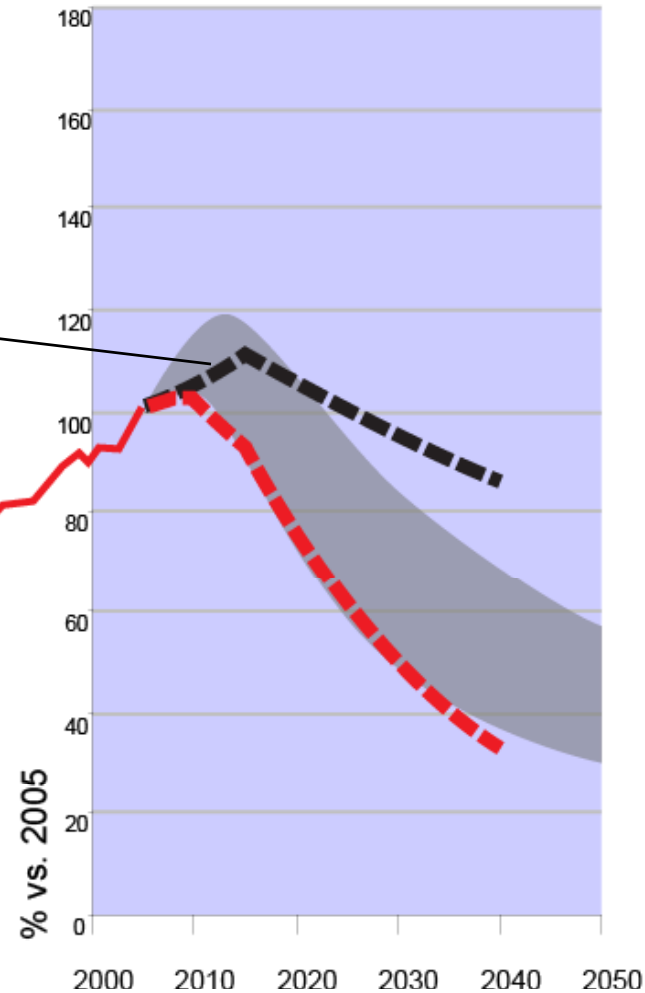
Gray: Scenario range per peer reviewed study by Fredrik Robelius, University of Uppsala

Fuel Availability: Scenario 1



'Techno Markets'

- Back to 'normal' economic growth
- Climate policy drives transition



Dynamic Cities Depletion Models:

- For the U.S. and Canada
- Conventional Oil

'Techno Markets'

Slower Depletion (-1% per year)

'Lean and Local'

More Rapid Depletion (-4% per year)

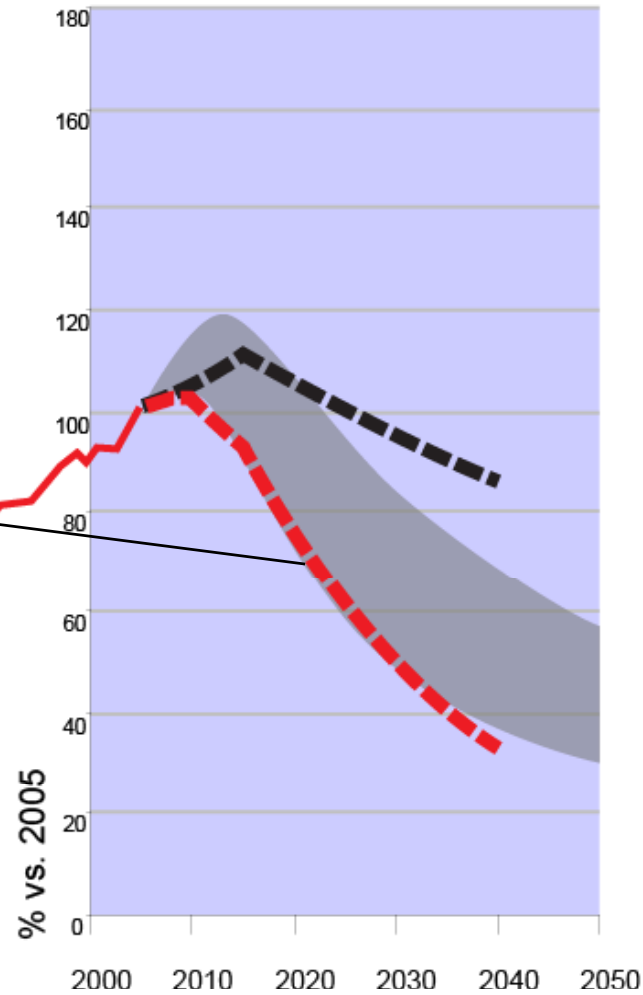


Fuel Availability: Scenario 2



'Lean and Local'

- Multi decade recession
- High oil prices and rationing drives transition



Dynamic Cities Depletion Models:

- For the U.S. and Canada
- Conventional Oil

'Techno Markets'

Slower Depletion (-1% per year)

'Lean and Local'

More Rapid Depletion (-4% per year)



Part I

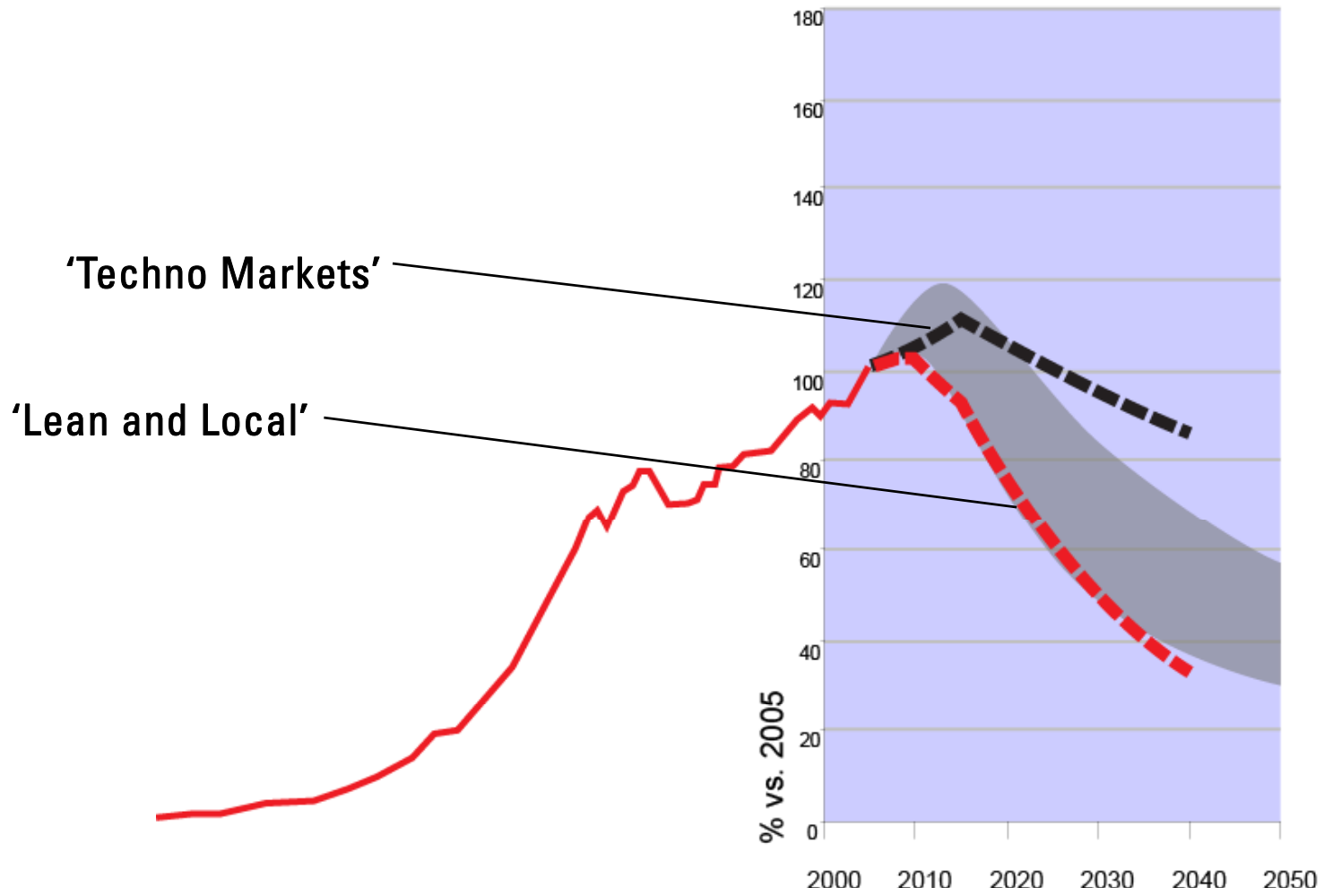
Understanding Peak Oil

Part II

Becoming more sustainable... and more resilient



To be competitive in any future...



To be competitive in any future...



Airlines Desert Small Towns, Despite Costly Investments in Infrastructure

If you build it, will they come? Not in Hagerstown, Maryland, where airlines have left town despite a brand new runway.



- Don't invest in something that could become a stranded asset

To be competitive in any future...



- Don't invest in something that could become a stranded asset
- Invest in technology that reduces both emissions and oil dependence

To be competitive in any future...

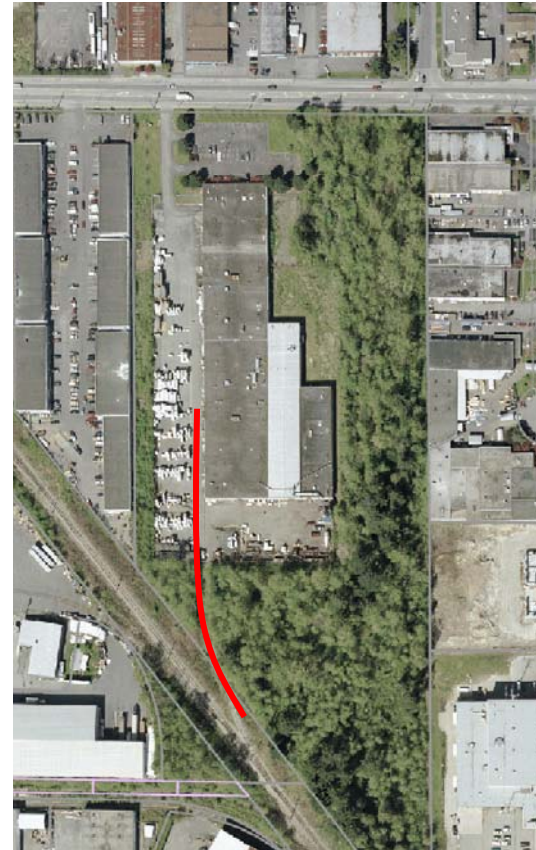


VS.



- Don't invest in something that could become a stranded asset
- Invest in technology that reduces both emissions and oil dependence
- Have the highest energy productivity (Out-compete all alternatives)

To be competitive in any future...

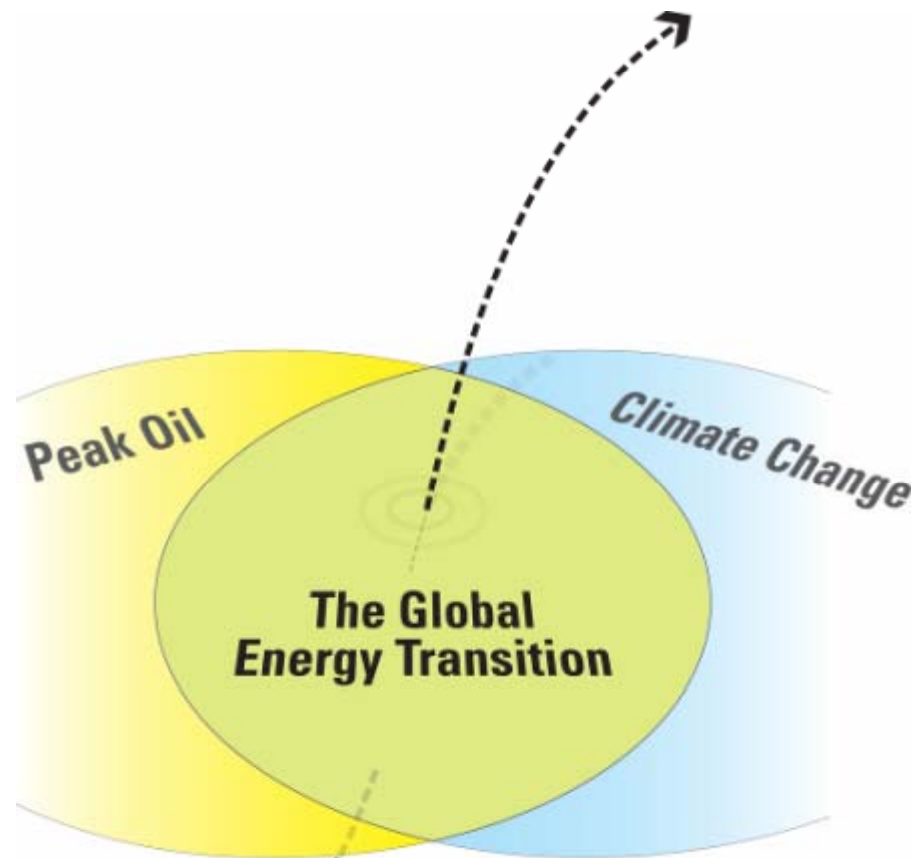


- Don't invest in something that could become a stranded asset
- Invest in technology that reduces both emissions and oil dependence
- Have the highest energy productivity (Out-compete all alternatives)
- Keep radical options open...

Bryn Davidson

604.728.0606

bryn@dynamiccities.org



Today:
Local Goals,
Challenges
& Priorities