



# Electrifying change

## *Making our Future*

Rod Oram's presentation to  
Energise Ōtaki's  
Community Meeting  
Ōtaki, October 27th, 2015

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# Community power – old model

- *Helps...*
- Decrease energy poverty
- Increase energy efficiency
- Nudges community collaboration
- Marginal gains for the local economy
- Easy to see ways to work on the demand side
  - E.g. insulation, home improvements
- Lot harder to work on the supply side
  - Generation and distribution technology changing fast
  - No economic or regulatory stability
  - Incumbent generator / retailers fighting to preserve their old system
- So, don't touch the supply side!...the incumbents argue
  - Leave it to us to supply renewable electricity, new services

# Agenda

- World
- Revolution
- New Zealand

*Beijing*  
**Hutongs...old and new**











# Intense urban pressures

- Today:
- 23m people in Beijing
- Future:
- 100m people in the metropolis of Beijing / Tianjin / Hebei
  - “Jing-Jin-Ji”











*London*

**Inside a bland building in Southwark**







2 DEGREES INVESTING	2
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CLIMATE STRATEGIES	2
ENERGY AND CLIMATE INTELLIGENCE UNIT	2
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FINCA	3
FLUID BUSINESS SOLUTIONS	3
G G G I	2
GINGKO	3
NEIGHBOURHOOD	1
PARKOPEDIA	1
SANDBAG	2
SIGMA RESOURCING	3
THE SOCIAL KINETIC	2
TRACK 0	3
ZUTEC TECHNOLOGIES	

*Chicago*  
**Riding the Red Line**



## At the north end...

- ...of the 38km Red Line of the Chicago Transit Authority
- In Skokie, this building was where Searle Pharmaceuticals invented NutraSweet (aspartame)
- Today it houses biotech start-ups...
  - ...including LanzaTech
  - Synthetic fuel company founded in Auckland but now based in Chicago
- “LanzaTech could only have been founded in New Zealand”
  - Says Sean Simpson, co-founder
  - ...because of the lateral thinking
- “But we can only grow in Chicago”
  - ...for access to people, capital and customers









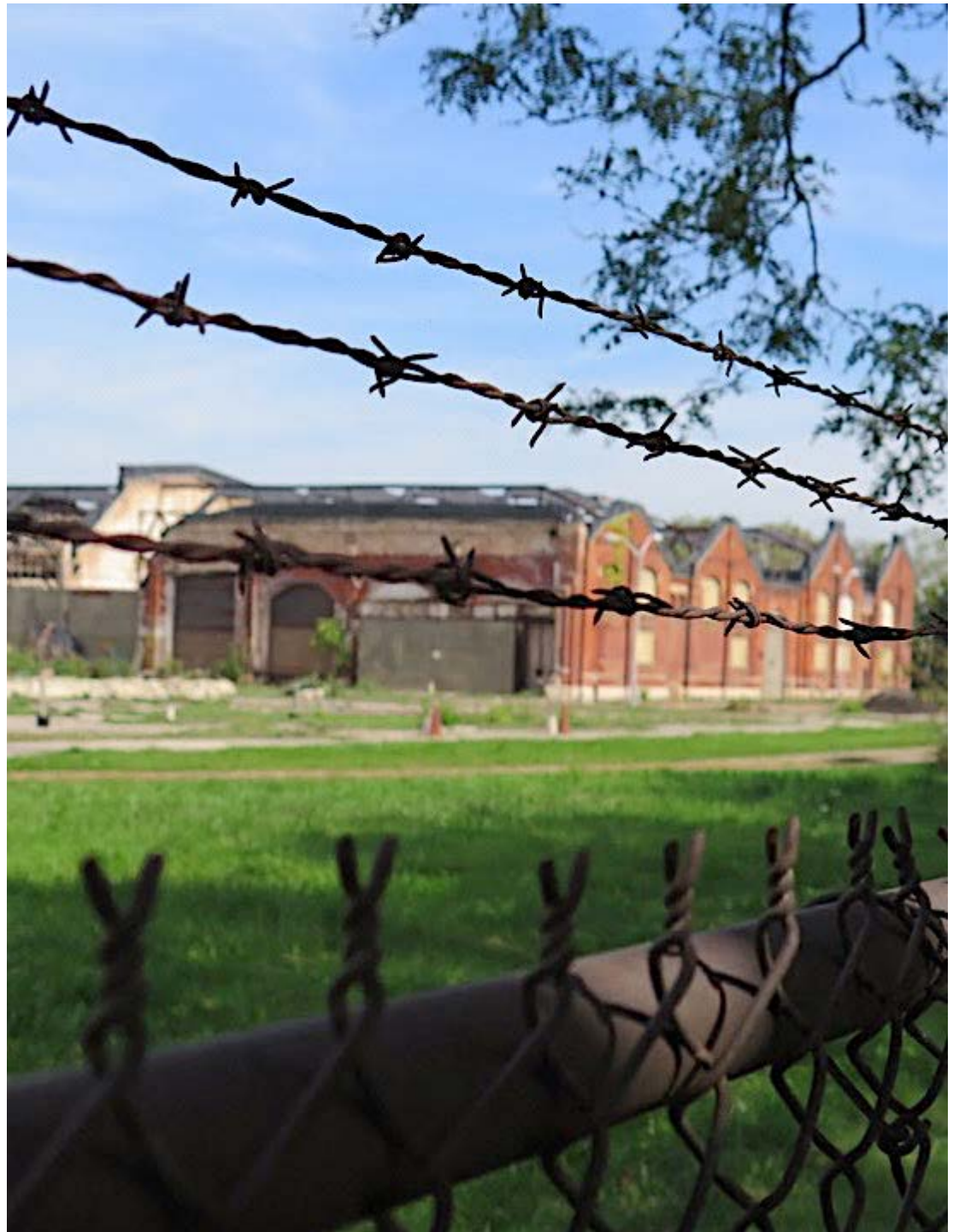


theguardian  
Sustainable  
Business  
Awards 2014

Carbon and energy management  
Innovation winner  
LanzaTech

## At the south end...

- Pullman District was once one of the leading US industrial areas
  - Pullman railroad cars
  - Steel works
  - Planned workers' neighbourhoods
- But also a place of violent labour confrontations...
  - ...chronic industrial decline
  - ...failing community
  - ...its community-owned bank went bust during the GFC





1891



COURTESY OF ILLINOIS STATE HISTORICAL LIBRARY





# Revival: Method soap factory

- Deep sustainability on “Cradle to Cradle” Principles
  - ...and local employment; food growing in rooftop greenhouses









# TOGETHER WE CAN

KEEP IT  
WEIRD

MAKE  
A  
DIFFERENCE

Do Anything  
We Can  
Dream Of

Live as one  
and heal the  
planet

Create  
a  
BUZZZZZZ!



Create a  
better tomorrow

- Kristina

FIGHT DIRTY!

CAN DO IT!!

Be  
Remarkable!

and be  
PROUD

Andy & Kristina

He always did

kind of like bubbles

In his bath

from JB!

Sisters!

Change the  
World

Again!

PULLMAN REDUX - BUT BETTER

CLEAN UP

REALLY GOOD

Blow  
Beautiful  
Bubbles

Over

HAVE FUN  
IN AN

BE ROLE MODEL  
IN BOTTLES  
- ERIC

♥ Tanya

GET SHIT DONE





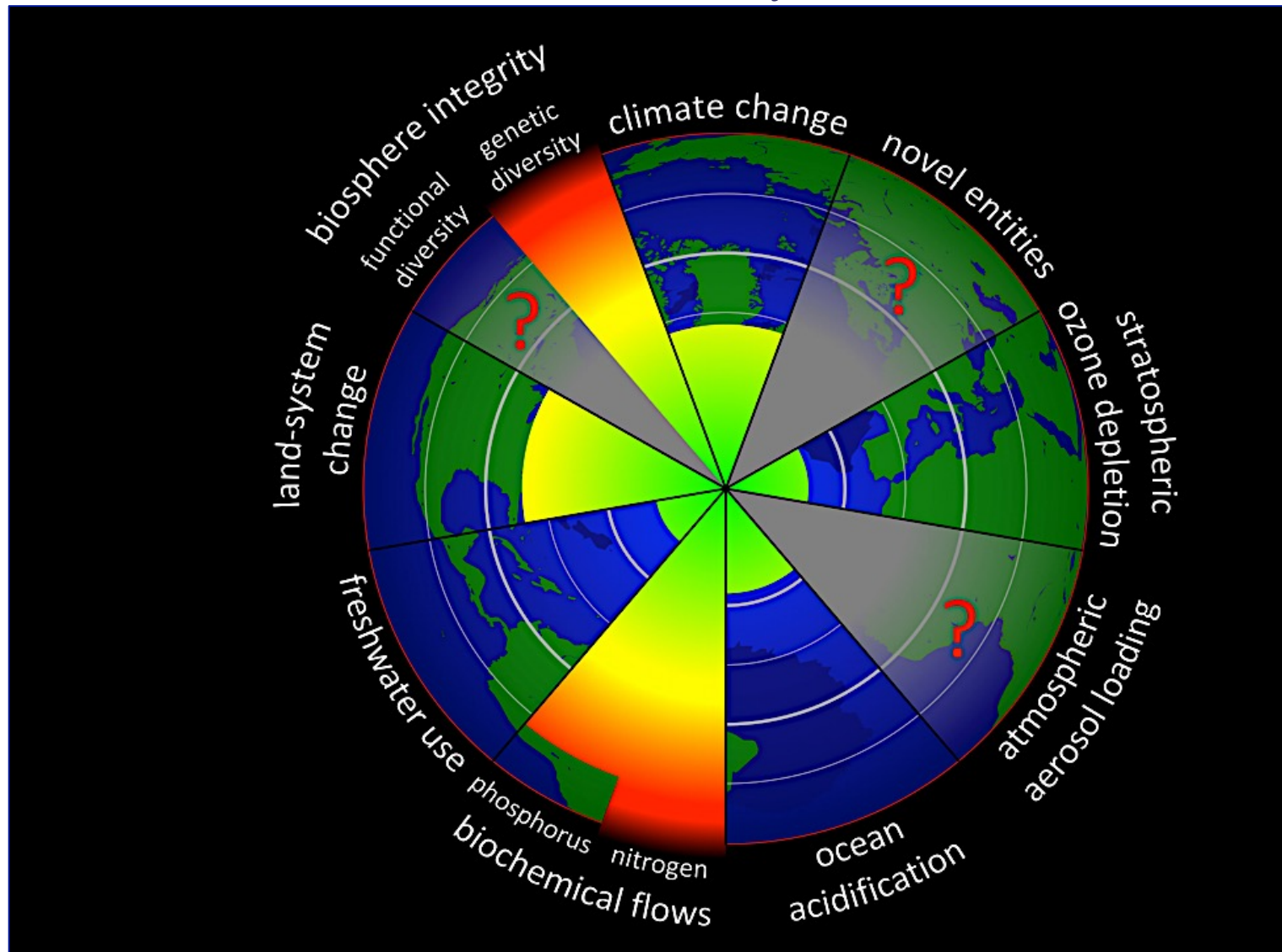
**What is your vision of a contemporary utopian community?**





# Intense pressures on the planet

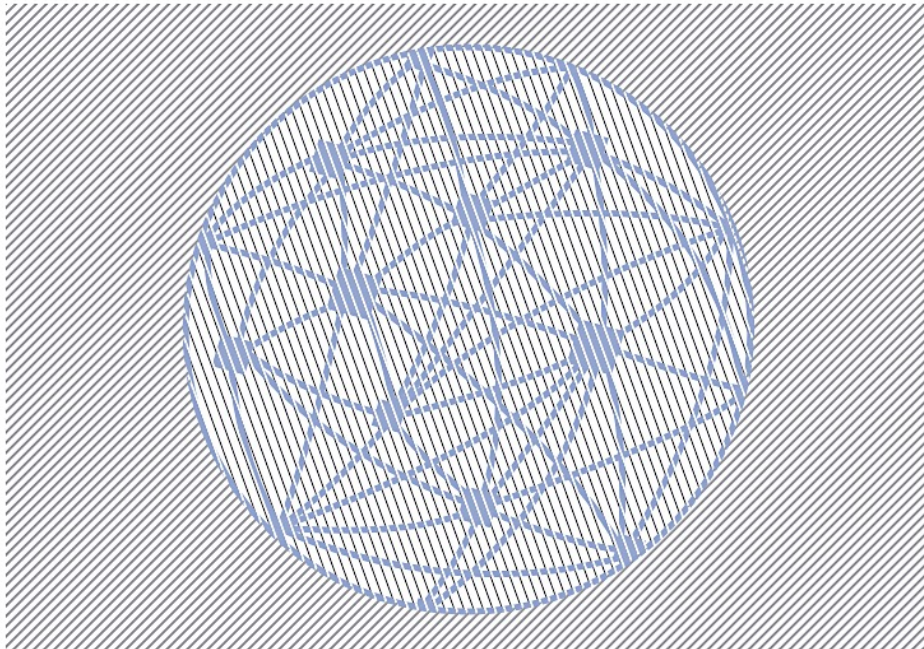
- Stockholm Resilience Institute's Planetary Boundaries



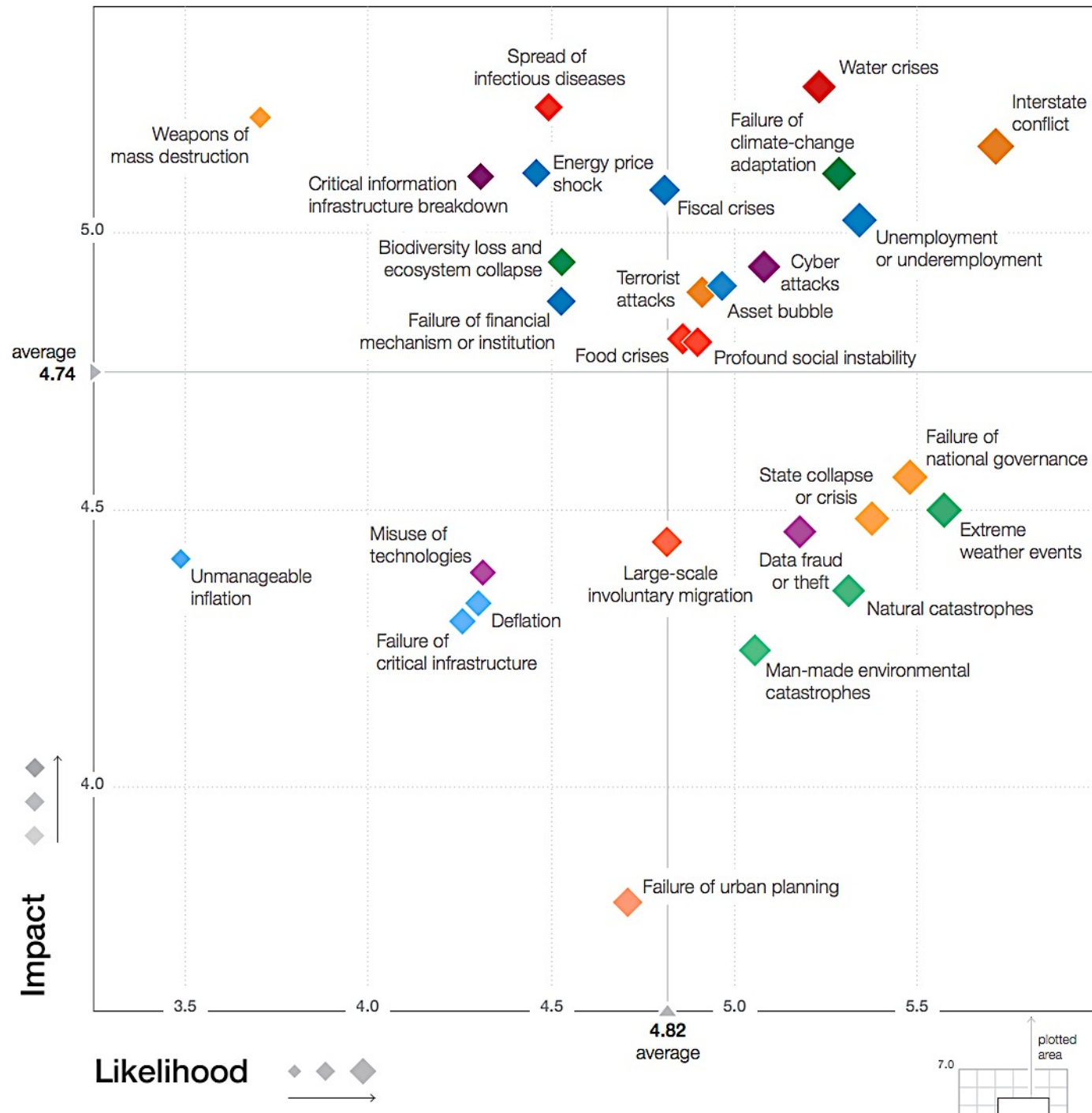
Insight Report

# Global Risks 2015

## 10th Edition







WORLD  
ECONOMIC  
FORUM

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IMPROVING THE STATE  
OF THE WORLD

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NIBLETT

RUTTE

STUBB

KENNY

STRALUJUMA

GABRIEL

WORLD  
ECONOMIC  
FORUM











# The 6<sup>th</sup> Great Extinction



# Agenda

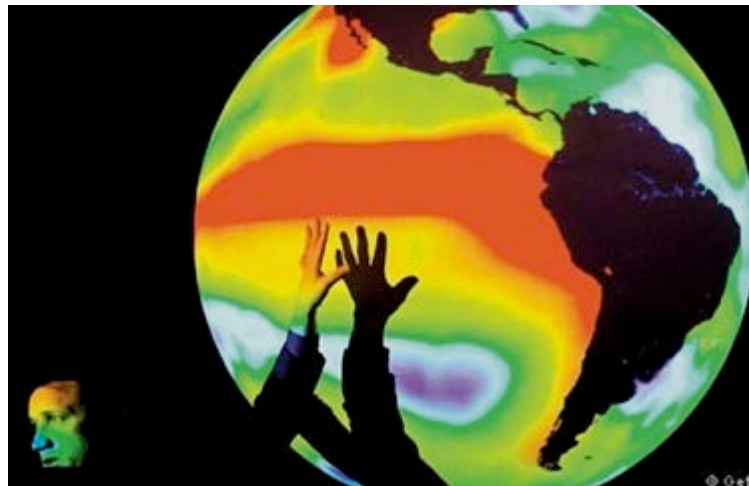
- World
- **Revolution**
- New Zealand





# Three words to save ourselves

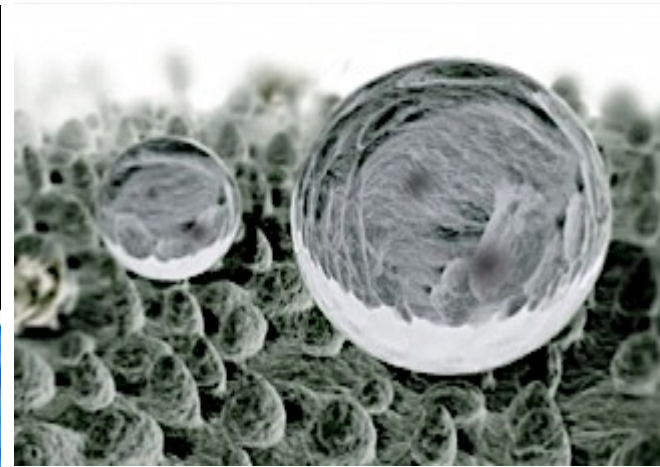
- **Ecology** – Greek *oikos*, home
- **Economy** – Greek *oikonomia*, stewardship of the home
- **Ethics** – Greek *ethos*, nature or disposition
  - **To restore our relationships with each other**
    - ...and between us and the planet
  - ...so we work with nature, not against it





# Biomimicry

Learning, borrowing, adapting  
from nature...a massive  
transformation of technology





# Bullitt Centre Seattle

- The world's greenest commercial building
- Self-sufficient for energy and water
- An exemplar of the Living Building Challenge
- <https://ilbi.org/lbc>





# THE NEW CLIMATE ECONOMY

The Global Commission on the Economy and Climate

TRANSLATE 



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## BETTER GROWTH BETTER CLIMATE

The New Climate Economy Report  
THE SYNTHESIS REPORT

THE GLOBAL COMMISSION ON THE ECONOMY AND CLIMATE

与清华大学合作开展气候

，请点击下方链接。

ING EVENTS

## The Global Commission on the Economy and Climate

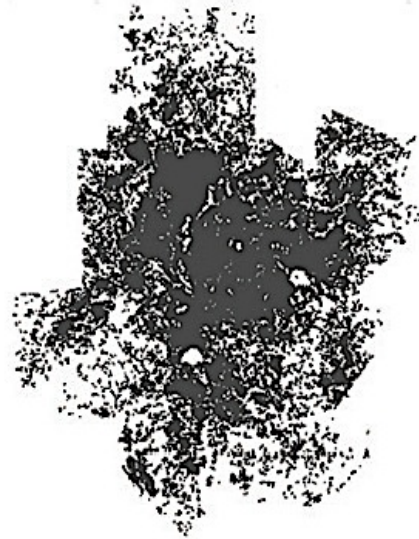
One of the most critical and urgent challenges facing countries today is achieving economic prosperity and development while also combating climate change.

The Global Commission on the Economy and Climate, and its flagship project The New Climate Economy, have been set up to help governments, businesses and society make better-informed

September 16, 2014 9:00am

**New York Launch of the New  
Climate Economy at the  
United Nations**

## ATLANTA'S BUILT-UP AREA



0 10 20 (km)

POPULATION: **5.25 MILLION**

URBAN AREA:  
TRANSPORT **4,280 KM<sup>2</sup>**

CARBON EMISSIONS:  
TONNES CO<sub>2</sub> PER PERSON  
(PUBLIC + PRIVATE  
TRANSPORT) **7.5**

## BARCELONA'S BUILT-UP AREA



0 10 20 (km)

POPULATION: **5.33 MILLION**

URBAN AREA:  
TRANSPORT **162 KM<sup>2</sup>**

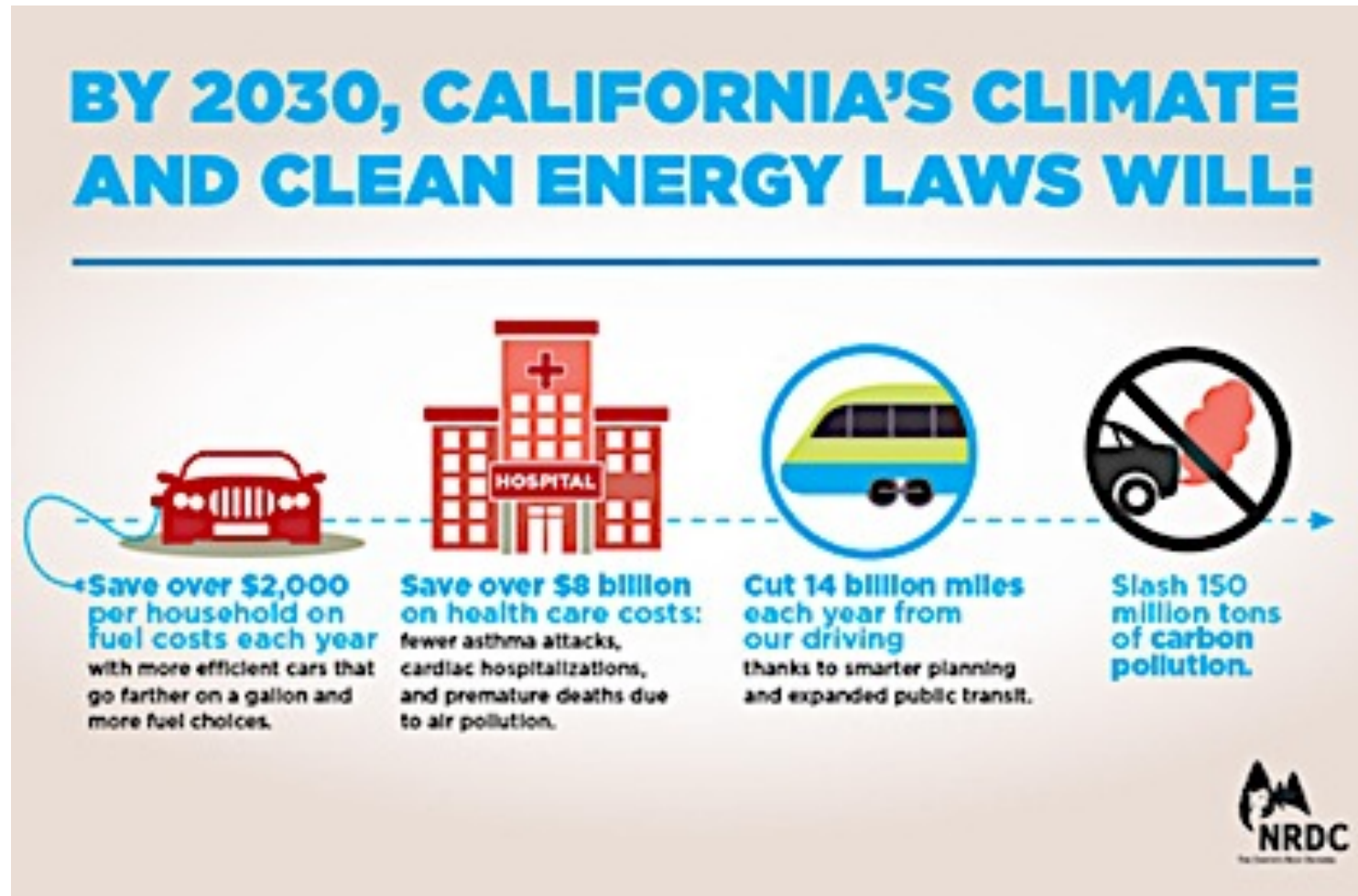
CARBON EMISSIONS:  
TONNES CO<sub>2</sub> PER PERSON  
(PUBLIC + PRIVATE  
TRANSPORT) **0.7**



# Our choice

- 2014 – 2030
- *Total investment in the global economy = US\$ 300 – 400 trillion*
- *Low carbon investment will cost a bit more than high carbon business-as-usual*
  - *Extra cost = 1% - 4% of GDP in 2030*
  - *...i.e. achieve the same level of GDP about 6 to 12 months later*
- High carbon investment
  - Cities, land use and energy sources  
= US\$89 trillion
- Low carbon investment
  - Cities, land use and energy sources  
= US\$93 trillion
- *Extra cost for low carbon investment:*
  - = US\$4 trillion - probably an over-estimate*  
*given inadequacies of conventional economic models*
  - = US\$270 billion a year = 1.5x New Zealand's GDP per year*
- Low carbon is cheaper than high carbon, if operating costs are included

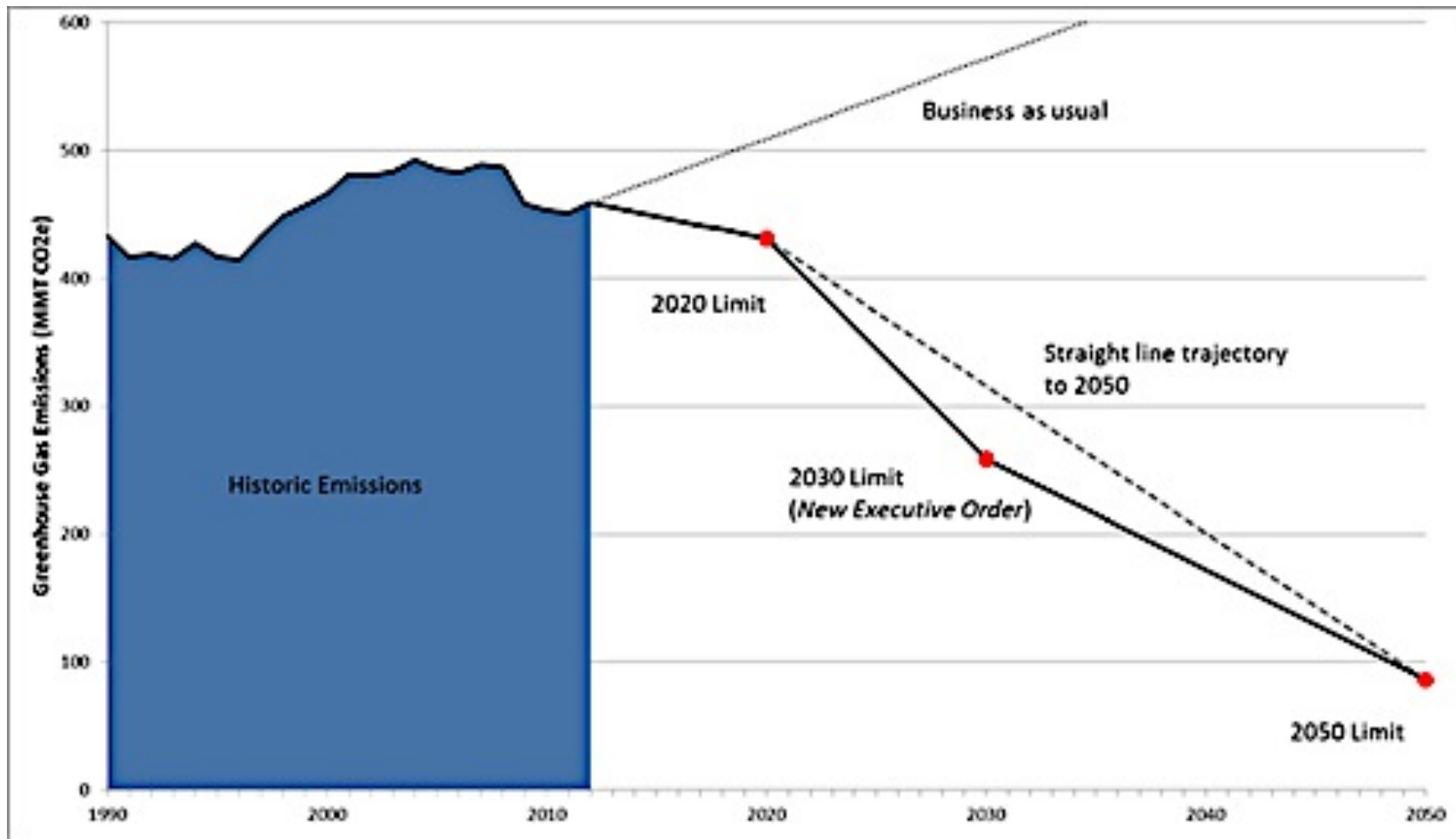
# Telling an encouraging story





# California

- 40% below 1990 levels by 2030...halfway toward its goal of 80% cut by 2050
  - 2020 goal, became law in 2006, supported by 70% of voters



# CLEAN DISRUPTION

WHY CONVENTIONAL ENERGY AND  
TRANSPORTATION WILL BE OBSOLETE BY 2030

PRESENTATION TO  
NZ SMART GRID FORUM

Te Papa Museum  
Wellington, New Zealand  
31 March 2015

**Tony Seba**

[www.tonyseba.com](http://www.tonyseba.com)



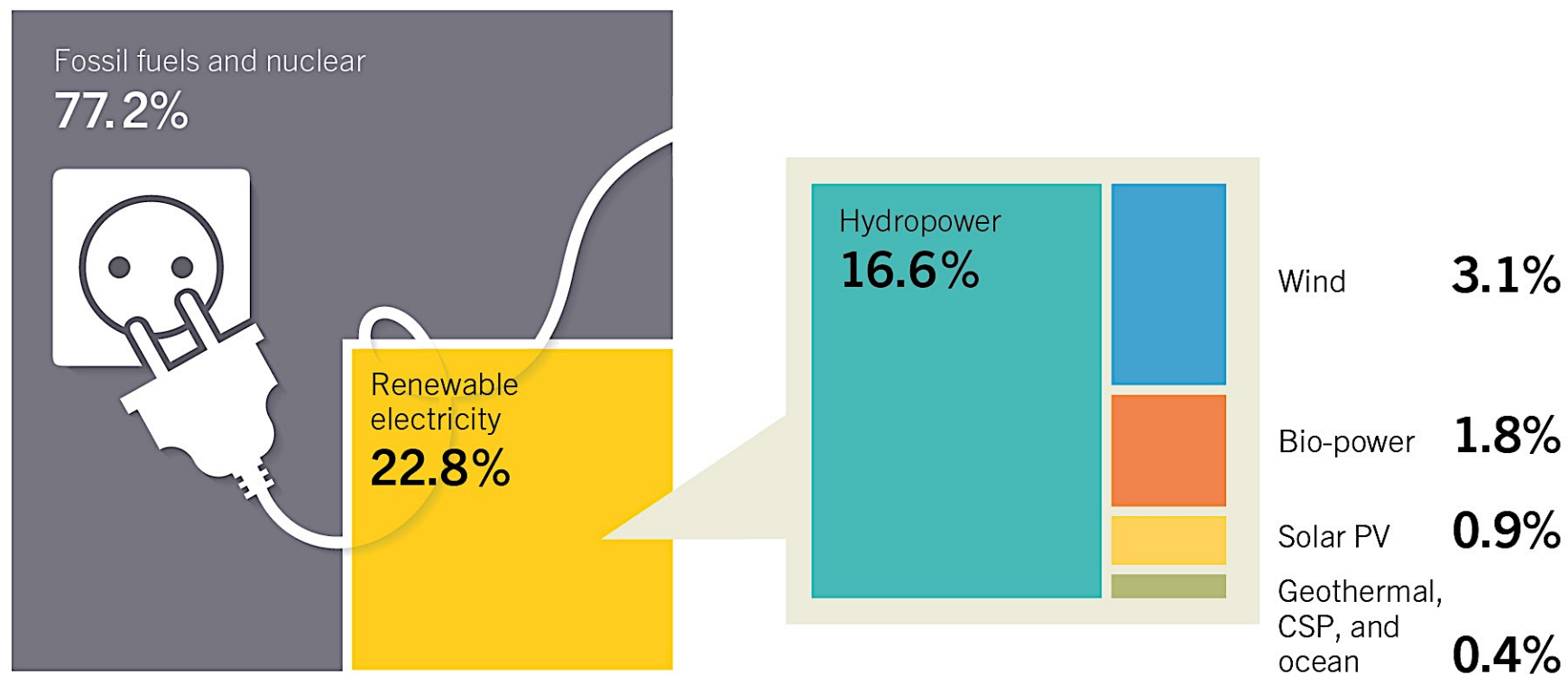
0:05 / 1:27:38



- <https://www.youtube.com/watch?v=j97Rh6DMclg&feature=youtu.be>

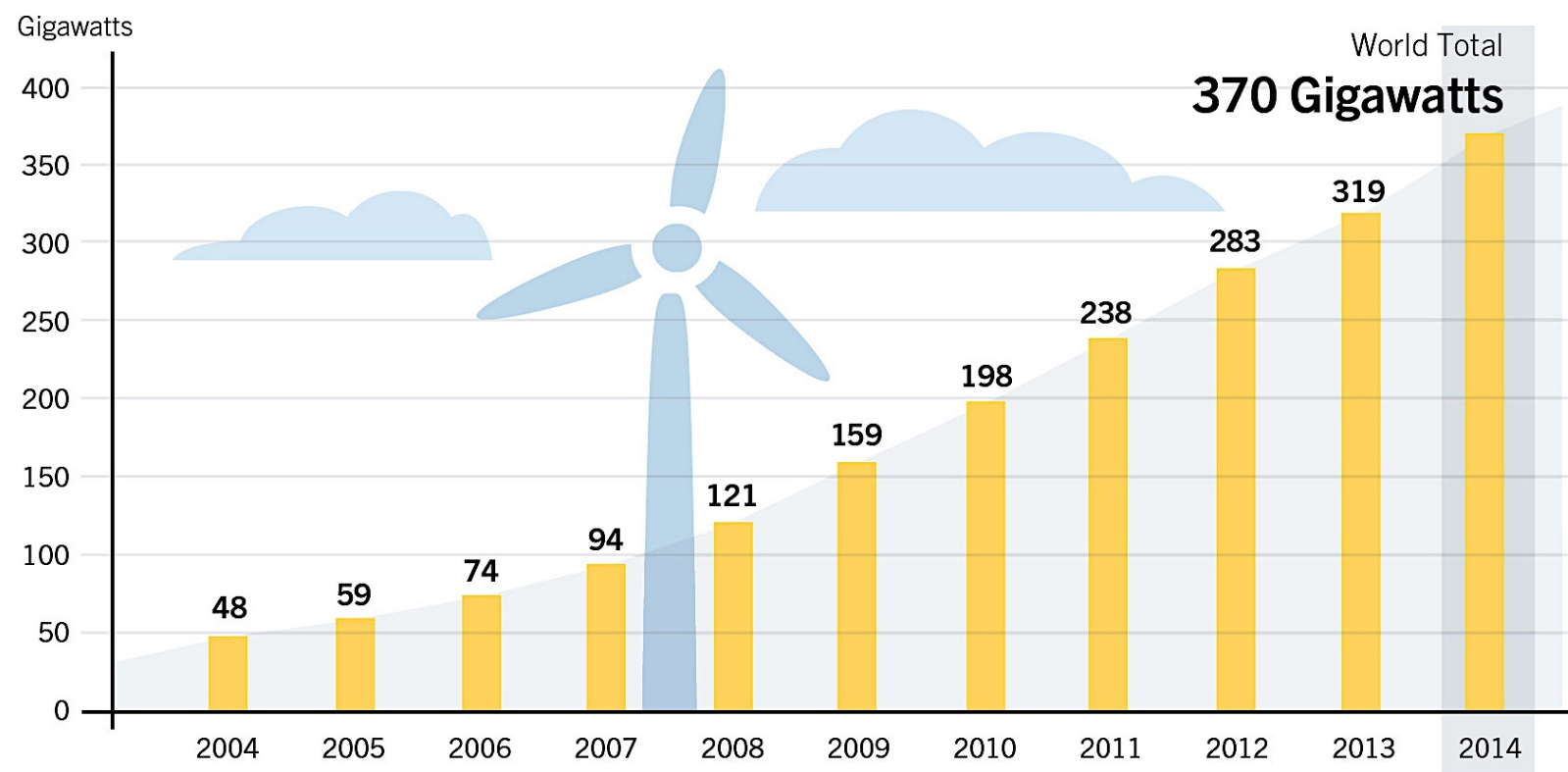


## Estimated Renewable Energy Share of Global Electricity Production, End-2014



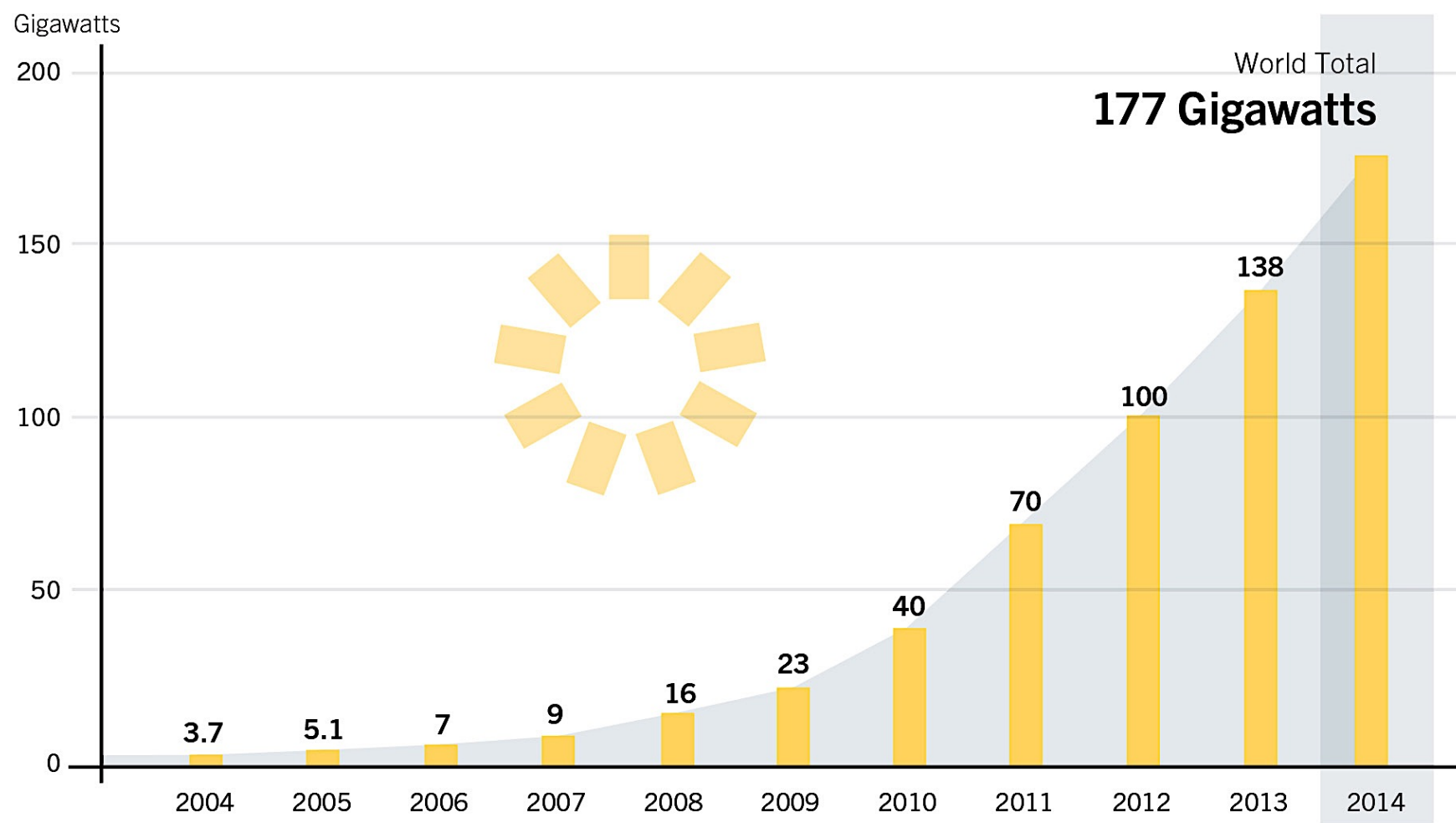
Based on renewable generating capacity in operation at year-end 2014.

## Wind Power Global Capacity, 2004–2014



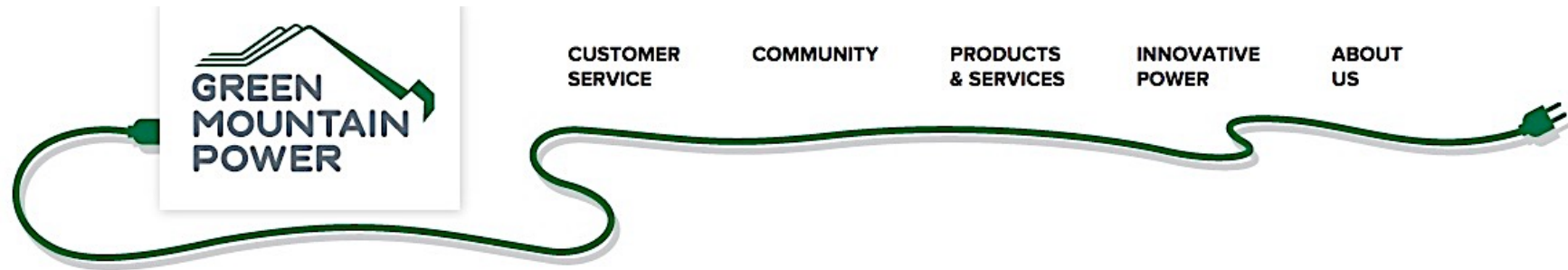


## Solar PV Global Capacity, 2004–2014



# Green Mountain Power – a US trailblazer

- Deep integration of new energy technology and economics into its business
- Power to the People – *New Yorker*:
  - <http://www.newyorker.com/magazine/2015/06/29/power-to-the-people>



GMP & NRG bring  
the freedom to  
charge to Vermont

New fast car charging stations open ▶






Production + Storage + Consumer = ProStumer

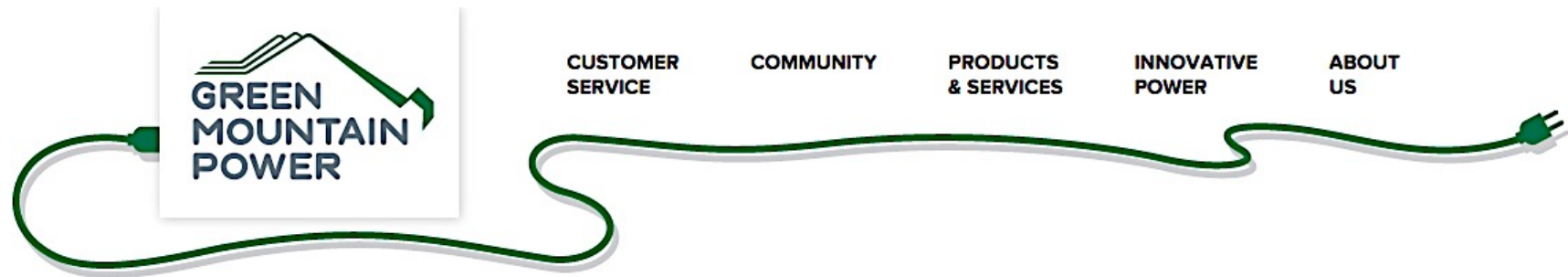


GMP and Tesla  
bring Vermonters  
the Powerwall  
battery

Increase reliability and become more energy  
independent 



# Benefit Corporations: “business for good”



## Proud to be a Certified B Corp

Green Mountain Power has joined the movement  
of using business as a force for good. ▶





# Join Piclo

Sign up to become part of our online renewable energy marketplace

We're trialling our [innovative trading service](#) with Good Energy, letting renewable generators sell their excess electricity directly to local commercial consumers. This six-month trial is backed by The Department of Energy and Climate Change (DECC) and Nominet Trust and has the support of Ofgem.

For all those renewable generators out there, imagine if you could sell your excess electricity to your neighbours, the local school or even your own business?

Visit our [Piclo page](#) to find out the possibilities.



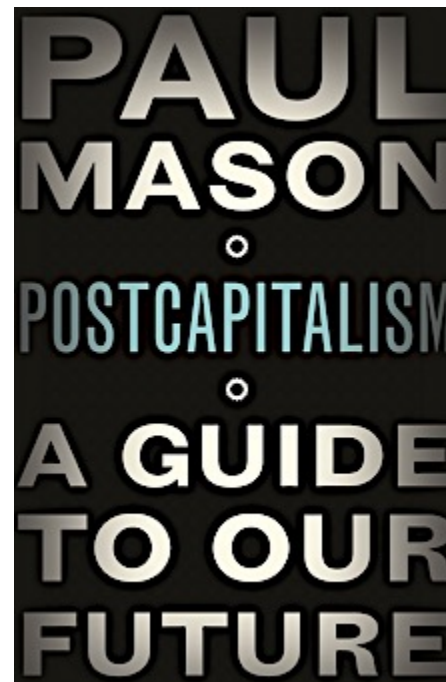
“

The UK has a long and rich history of developing innovative and exciting new technologies that can enhance our lives whilst also tackling serious problems such as climate change. The Open Utility project is being supported by the Energy Entrepreneur Scheme which has been developed to help the UK achieve our ambitions to improve energy security, reduce emissions whilst also creating new jobs.

Amber Rudd MP  
Parliamentary Secretary of State, Department of Energy and Climate Change

# Intense pressures on economies, business models

- “Capitalism is a complex, adaptive system which has reached the limits of its capacity to adapt.”
- “Once capitalism can no longer adapt to technological change, postcapitalism becomes necessary.”





# Postcapitalism

Three drivers of radical change:

1. “Information technology has reduced the need for work”
  - Automation is now replacing jobs at a startling speed
  - E.g. Half the jobs in the US are at high risk of vanishing within a decade or two, a 2013 report by the Oxford Martin school estimated
2. “Information goods are corroding the market’s ability to form prices correctly”
  - Supply and demand assumes scarcity. Now certain goods are abundant
3. “Goods, services and organisations are appearing that no longer respond to the dictates of the market and the managerial hierarchy”
  - People are collaborating in ways that do not always make sense to traditional economists...
  - ...who are used to assuming that humans act in self-interest and price things according to supply and demand

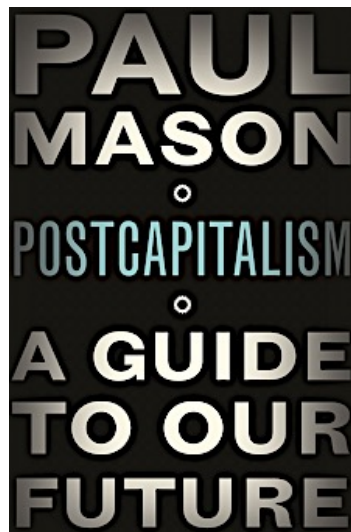
# Postcapitalism

- In a postcapitalist world:
  - Only part of the population will work for cash, on a quasi-voluntary basis
  - The rest will be pursuing non-monetary goals.
  - Governments to provide a guaranteed income for the entire population
    - and free (or low-cost) basic services and public infrastructure
  - Companies automate as much as they can (rather than using cheap labour)
  - Central bankers conduct financial repression to reduce national debt
- Government provides the framework to enable individuals to flourish
- State functions are handed over to citizens
- People are secure — and equal — enough to use the efficiencies unleashed by automation to pursue worthy goals, such as volunteering to write Wikipedia pages



# Postcapitalism

- “It is absurd that we are capable of witnessing a 40,000 year old system of gender repression begin to dissolve before our eyes and yet we see the abolition of a 200 year old economic system as an unrealistic utopia” – *Paul Mason*
- 
- <http://www.radionz.co.nz/national/programmes/saturday/audio/201775049/paul-mason-postcapitalism>



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NEW ZEALAND  
NATIONAL**


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## Paul Mason: postcapitalism

Updated at 1:52 pm on 19 October 2015

“It is absurd that we are capable of witnessing a 40,000 year old system of gender repression begin to dissolve before our eyes and yet we see the abolition of a 200 year old economic system as an unrealistic utopia” – Paul Mason

Many have predicted or wished for an end to capitalism, but it has proved to be a fairly robust system. Now comes a wishful prediction that capitalism is changing into something completely new.

Paul Mason is Economics Editor of Channel 4 News in the UK, and writes regularly on culture and politics and the economy. His new book is *PostCapitalism: a Guide to Our Future*.

Paul Mason believes that vast numbers of people are already discovering new forms of ownership and business that are quite unlike capitalism and that offer a chance to create a more socially just and sustainable economy. He gets off the tube to talk with Kim Hill.



Paul Mason

Photo: Antonio Olmos

 [Play](#)  [Ogg](#) | [MP3](#) (23' 54")

Tags: [business](#) [economy](#) [politics](#) [technology](#) [postcapitalism](#)

 [Podcast \(MP3\)](#)  [Oggcast \(Vorbis\)](#)

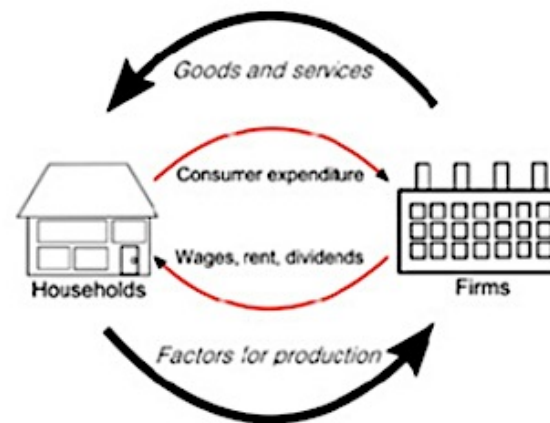


# KATE RAWORTH

exploring doughnut economics

[HOME](#)[BLOG](#)[ABOUT](#)[DOUGHNUT](#)[PUBLICATIONS](#)[VIDEOS](#)[EVENTS](#)

why it's time to vandalize the economics textbooks...



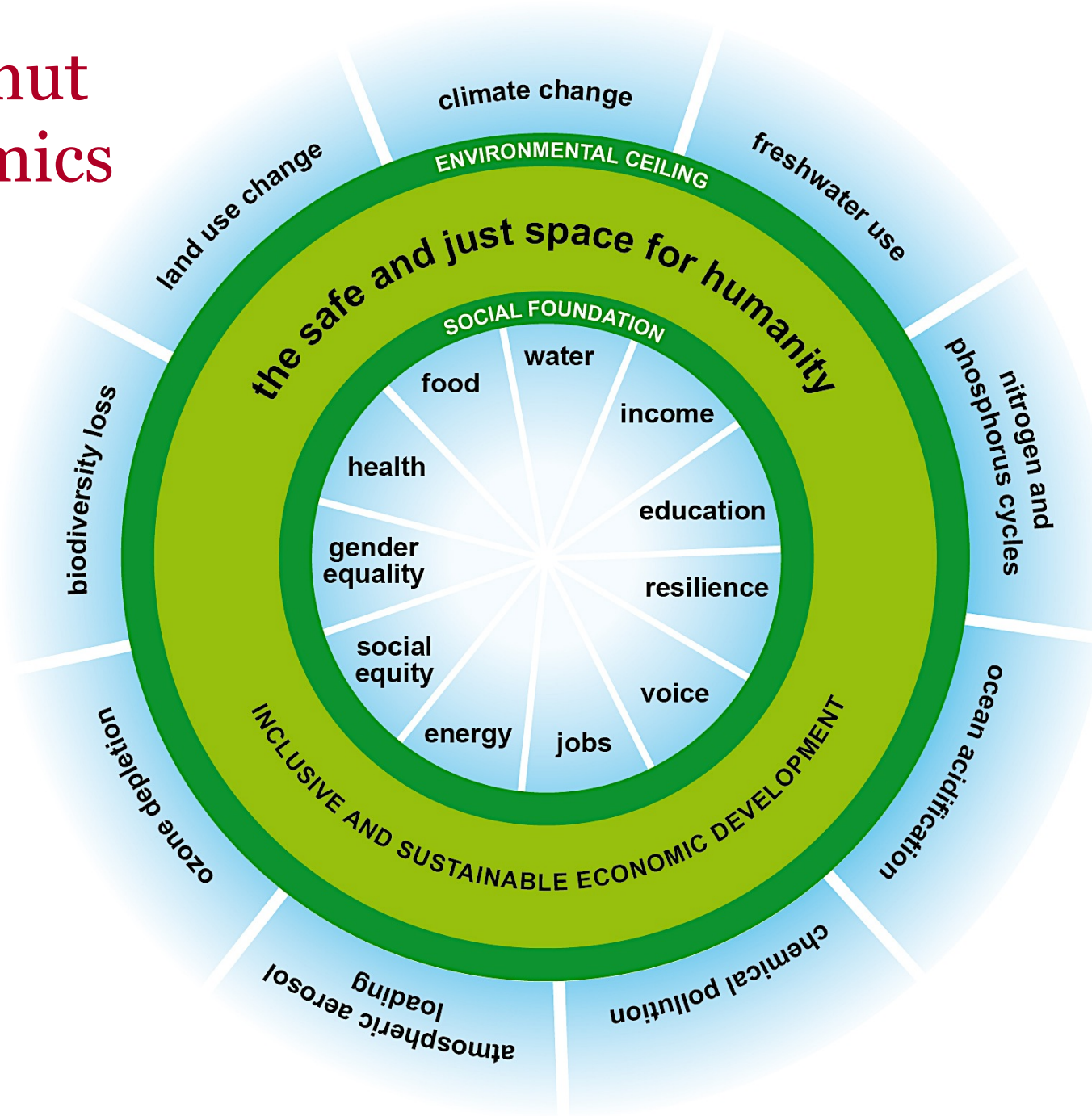
This is the website of Kate Raworth – economist and development re-thinker. My passion is the rewriting of economics to make it a fit tool for addressing the 21st century's social and

What is I

- <http://www.kateraworth.com>
- <http://www.thersa.org/events/audio-and-past-events/2012/doughnut-economics-creating-a-safe-and-just-space-for-humanity>



# Doughnut Economics



# Community

- Issues are increasingly global....solutions are increasingly local
- We need to achieve an absolutely unprecedented speed, scale and complexity of change
- Solutions require very strong, learning communities
- Essential attributes:
  - Common sense
  - Common purpose
  - Common wealth
- Places where individuals are valued, helped, encouraged
- ...in return, they participate, change

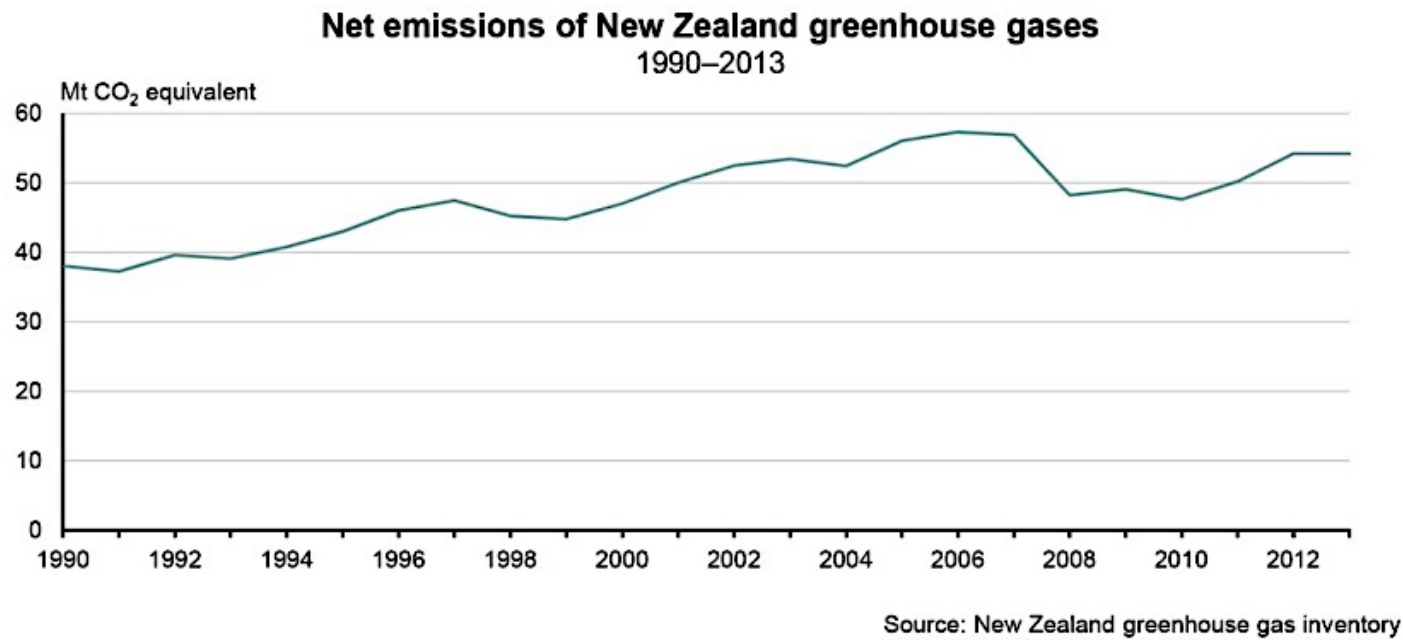


# Agenda

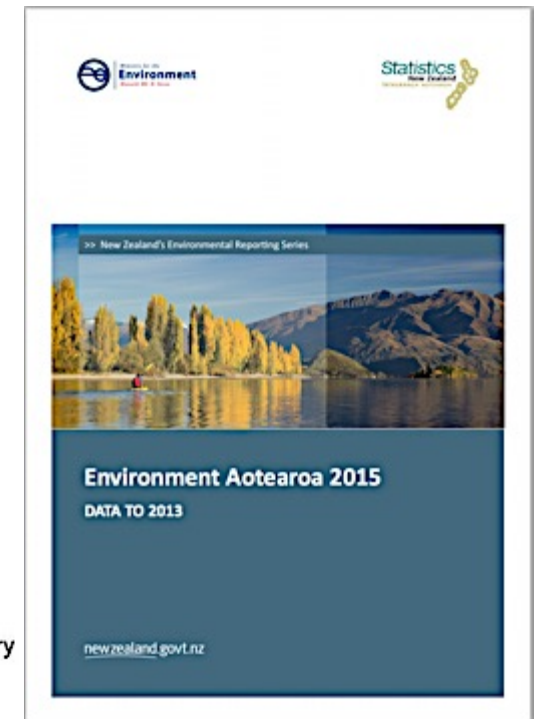
- World
- Revolution
- **New Zealand**

# State of Aotearoa's ecosystem

- NZ's first ecosystem assessment in eight years
  - ...first in new statutory reporting framework
- [http://www.mfe.govt.nz/sites/default/files/media/Environmental%20reporting/environment-aotearoa\\_0.pdf](http://www.mfe.govt.nz/sites/default/files/media/Environmental%20reporting/environment-aotearoa_0.pdf)



te: Mt CO<sub>2</sub> equivalent – megatonnes equivalent carbon dioxide.





# Water

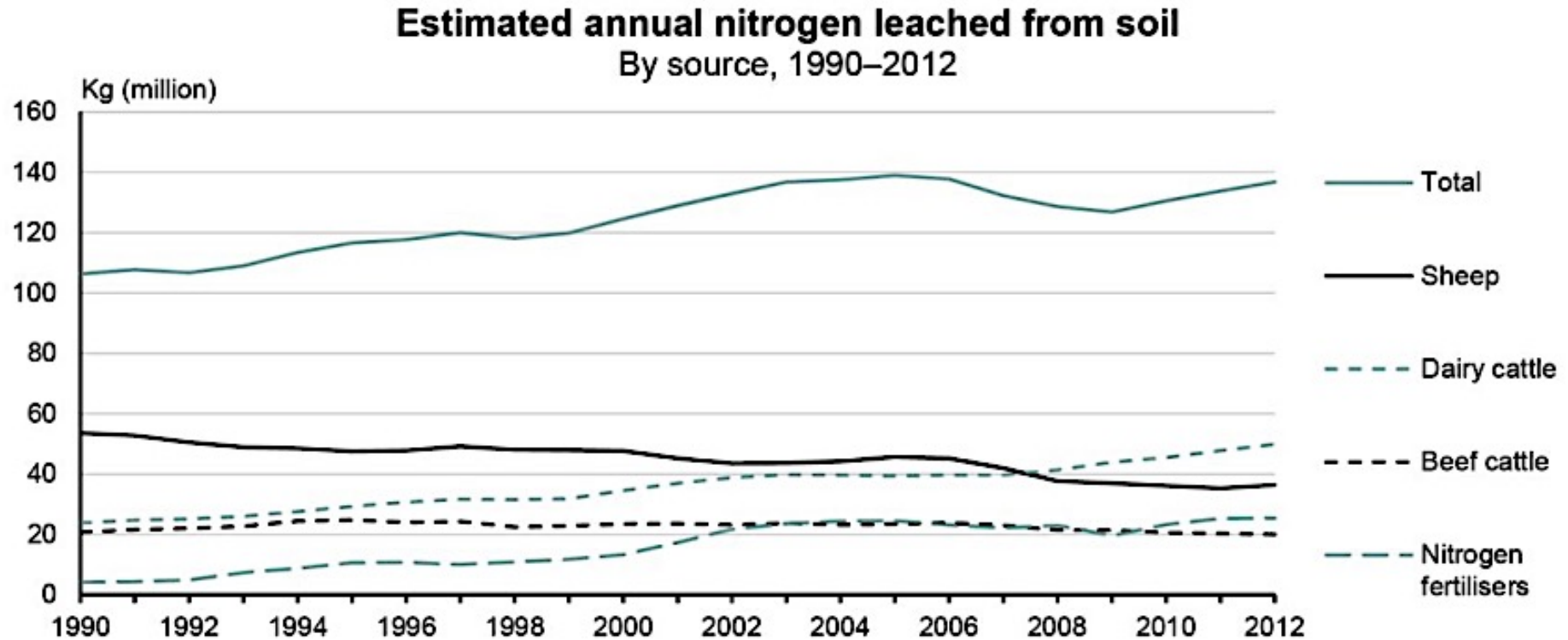
**Table 1: Trends for water clarity, nutrients, and macroinvertebrate community index at NIWA sites, 1989–2013**

Variable	Trend	Sites showing a statistically significant increase (%)	Sites showing a statistically significant decrease (%)	Sites showing an indeterminate trend (%)
Clarity	↗	64	9	27
Total nitrogen	↗	60	14	26
Nitrate-nitrogen	~	52	27	21
Ammonia-nitrogen	↘	4	78	18
Total phosphorus	~	38	30	32
Dissolved phosphorus	↗	51	14	35
Macroinvertebrate community index (MCI)	~	5	13	83

Source: Larned et al (2015)

Note: Trends for NIWA's National River Water Quality Network (77 sites). Data are for the period 1989–2013, except for the MCI (covering 462 NIWA and regional council sites) which are for the period 2004–13. Green arrows indicate improving water quality; red arrows indicate declining water quality. No trends could be determined for nitrate-nitrogen, total phosphorus, and the MCI. Percentages may not add to 100 percent due to rounding.

# Nitrogen leaching

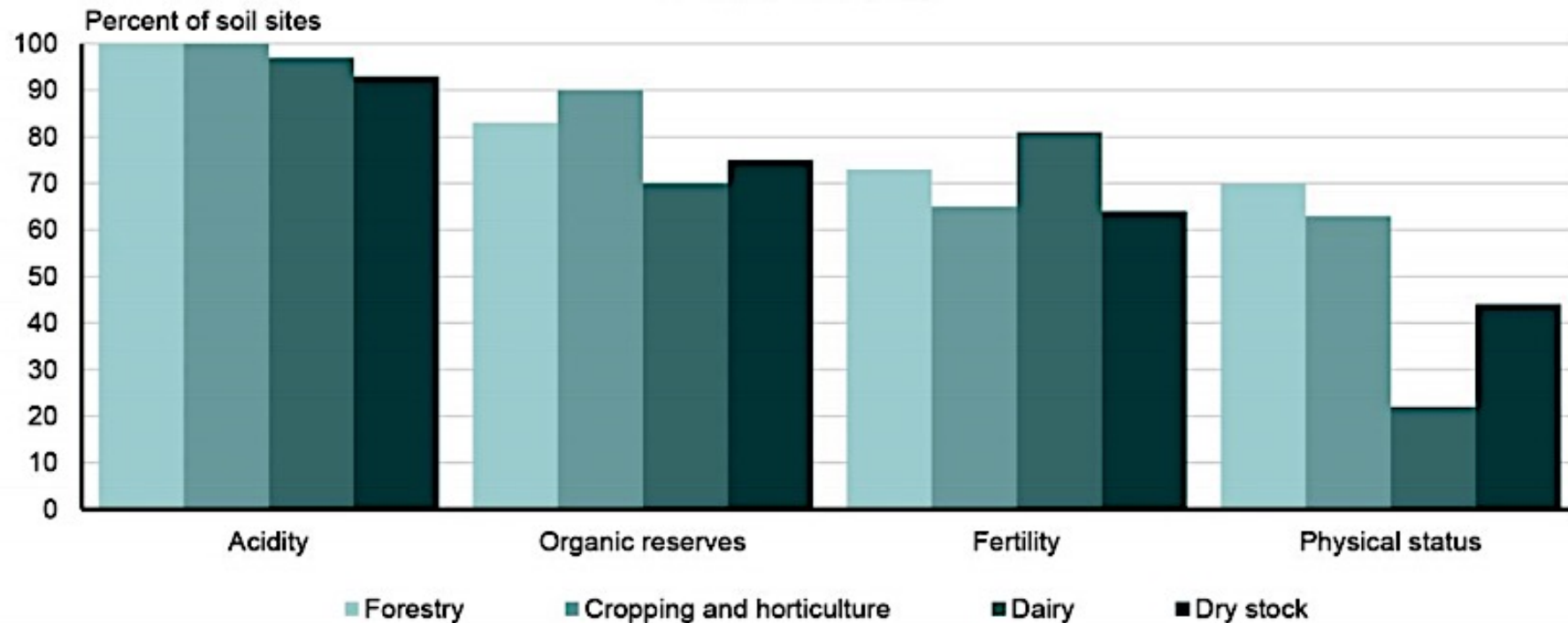


Source: Ministry for the Environment



# Soil health

**Soil sites within target range for given soil health indicators**  
By land use, 2011



Source: Landcare Research; regional councils; unitary authorities

# Endangered species

**Table 3: Indigenous species that are threatened or at risk of extinction, by taxonomic group**

<b>Taxonomic group</b>	<b>Still living (number)</b>	<b>Threatened or at risk of extinction (number)</b>	<b>Threatened or at risk of extinction (%)</b>
Bats	4	3	75
Birds	203	164	81
Earthworms	171	32	19
Freshwater fish	39	28	72
Freshwater invertebrates	580	148	26
Frogs	3	3	100
Marine invertebrates	307	233	76
Reptiles	57	50	88
Vascular plants	2378	918	39

Source: Department of Conservation; Threat Classification System 2012–14; Hitchmough et al (2013); de Lange et al (2013); Robertson et al (2013); Newman et al (2013); O'Donnell et al (2013); Goodman et al (2014); Grainger et al (2014); Freeman et al (2014); Buckley et al (2015).

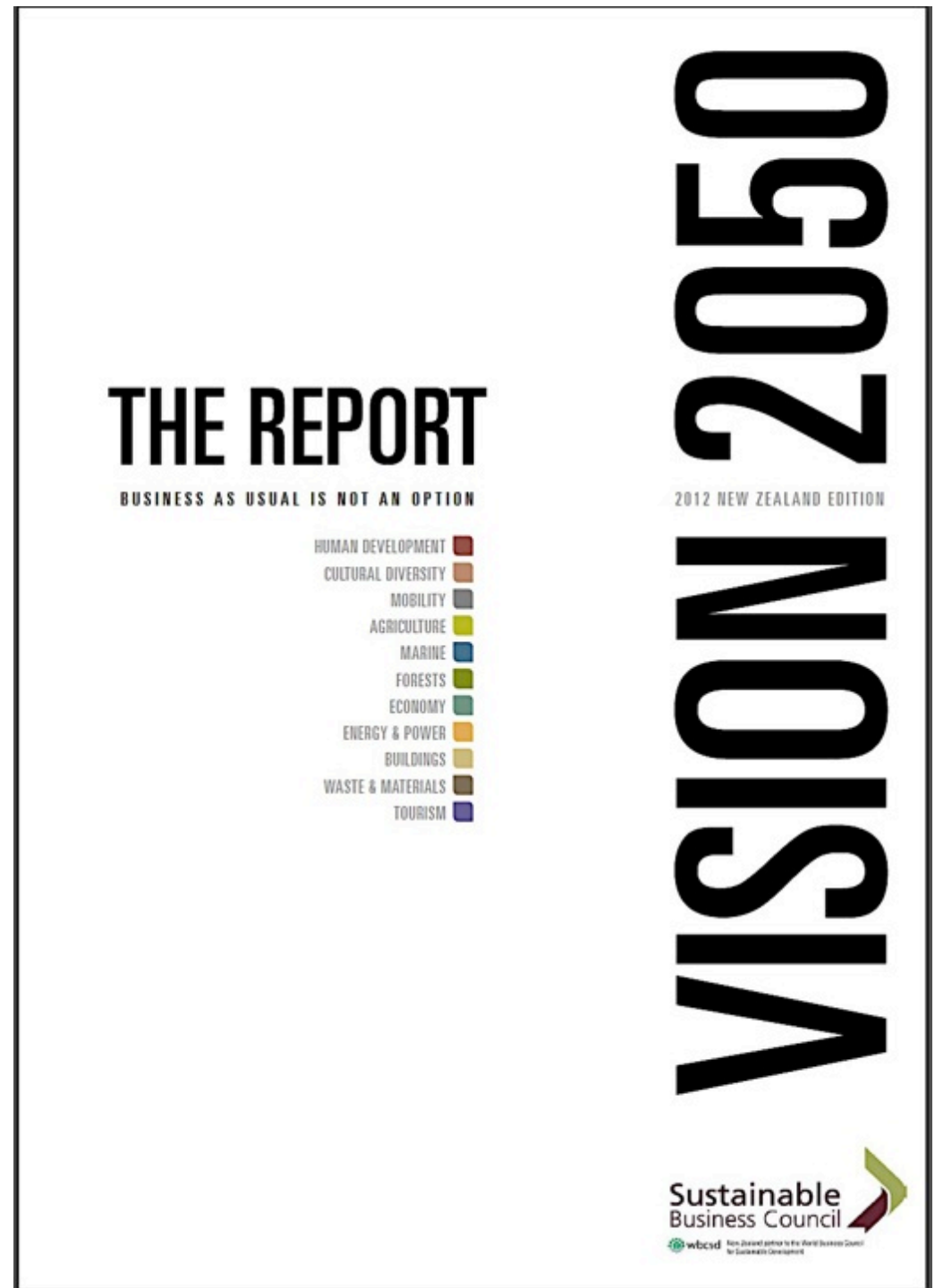
Note: Excludes taxonomically indeterminate taxa, species that do not breed in New Zealand, and groups for which a recent threat classification is not available. In addition to the above species, 40 species are confirmed extinct.





# NZ Vision 2050

- ...by a group of young leaders...
  - ...under the NZ Business Council for Sustainable Development...
  - ...which morphed into Business NZ's Sustainable Business Council
- Download at:
  - <http://www.sbc.org.nz/projects/vision2050>





LOCATION: WELLINGTON, NZ



IT IS PROJECTED  
WE WILL BE USING  
**2.3 EARTHS**  
BY 2050.<sup>2</sup>  
CLEARLY, THIS  
SITUATION IS  
NOT SUSTAINABLE.

# THE VISION

## VISION 2050 NEW ZEALAND

**In 2050 New Zealand has...  
six million people living well and  
within the limits of the planet.**

Behind this simple statement is a complex set of issues that urgently need addressing. Vision 2050 provides a framework to face these challenges and consider how business can lead the change our country needs.

## URGENCY FOR CHANGE

We are facing many challenges over the next 40 years that require us to make changes to the way we live and to the way our businesses and other institutions interact with society and the natural environment. Facing up to the challenges means difficult decisions will have to be made now to avoid leaving an unpalatable legacy for our children and grandchildren. Business is a core agent of this change and the urgency must be realised now if we are going to achieve our positive aspiration.

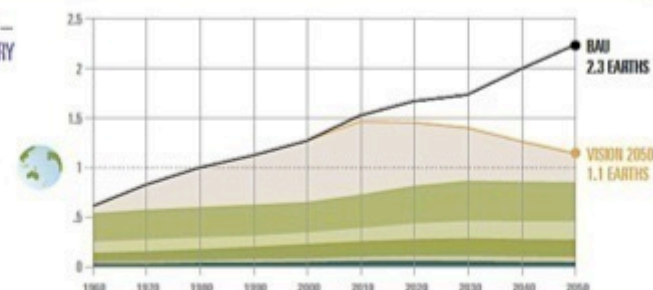
New Zealand's population will increase significantly over the next 40 years. Although the estimated extra one to two million people will not create a densely-populated country, this rise will coincide with a world population that has increased by two billion.

**How do we meet the needs of a world that is sharing finite resources and overloaded ecosystem services, such as clean air and water?**

At our current rate of resource consumption it is projected we will be using 2.3 Earths by 2050.<sup>2</sup> Clearly, this situation is not sustainable.

### GLOBAL FOOTPRINT — CURRENT TRAJECTORY

CARBON FOOTPRINT  
CROPLAND  
GRAZING LAND  
FOREST LAND  
BUILT-UP LAND  
FISHING GROUND



Source: WECID (2010): Vision 2050







- ✦ New Zealand has abundant and accessible native forests. Plantation forests provide for a thriving clean energy and wood products industry.
- ✦ Forests are valued for their aesthetics and the services they provide. We value wood products as a sustainable product for construction, manufacturing and energy.

- New Zealand's forest sector is a leading global producer of wood products and a major source of employment and income for rural communities.
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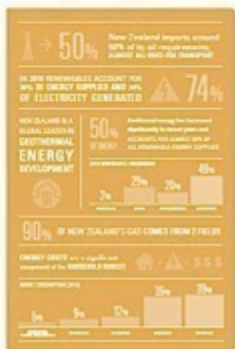
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- + **New Zealand is a place where talent wants to live, where businesses want to invest and innovation thrives.**
- ♥ **The impact of emissions, water, waste and biodiversity are integrated in business success, the value science and research has for our future.**



- ✦ New Zealand energy is sustainable, renewable and affordable.
- ✦ Energy is treated as a scarce resource that we have a secure supply. Strong government to ensure no leading role within impact on the environment.
- ✦ **Energy**
  - **Electricity**
    - 100% renewable energy
    - 80% generated from hydro
    - 10% from wind
    - 10% from geothermal
  - **Gas**
    - 100% imported
    - 90% from Australia
    - 10% from NZ
  - **Oil**
    - 100% imported
    - 90% from Australia
    - 10% from NZ
- ✦ **New Zealanders proud of their energy**
  - 100% renewable energy
  - 80% generated from hydro
  - 10% from wind
  - 10% from geothermal



**New Zealand homes and commercial buildings are healthy, sustainable and durable**

**We value transparency of building performance including health aspects, from planning to build and it is achievable.**

- 1. All buildings are designed and constructed to meet the highest standards of health and safety.
- 2. All buildings are designed and constructed to meet the highest standards of energy efficiency.
- 3. All buildings are designed and constructed to meet the highest standards of environmental sustainability.
- 4. All buildings are designed and constructed to meet the highest standards of social sustainability.
- 5. All buildings are designed and constructed to meet the highest standards of economic sustainability.
- 6. All buildings are designed and constructed to meet the highest standards of cultural sustainability.
- 7. All buildings are designed and constructed to meet the highest standards of community sustainability.
- 8. All buildings are designed and constructed to meet the highest standards of global sustainability.



**Sustainable processes and principles are the basis for material management.**  
New Zealand has zero waste.

**Responsibility for waste is localised and supported by industry and government. Ownership of the product life cycle is a core business value.**

- 1. **Waste is avoided and reduced** by minimising the use of materials and energy, and by maximising the use of recycled materials.
- 2. **Waste is recycled** by using recycled materials in the production of new products.
- 3. **Waste is reused** by using waste materials in the production of new products.
- 4. **Waste is recovered** by using waste materials in the production of new products.
- 5. **Waste is landfilled** by using waste materials in the production of new products.
- 6. **Waste is incinerated** by using waste materials in the production of new products.
- 7. **Waste is composted** by using waste materials in the production of new products.
- 8. **Waste is used for energy** by using waste materials in the production of new products.
- 9. **Waste is used for construction** by using waste materials in the production of new products.
- 10. **Waste is used for agriculture** by using waste materials in the production of new products.
- 11. **Waste is used for industry** by using waste materials in the production of new products.
- 12. **Waste is used for research and development** by using waste materials in the production of new products.
- 13. **Waste is used for education** by using waste materials in the production of new products.
- 14. **Waste is used for recreation** by using waste materials in the production of new products.
- 15. **Waste is used for art and culture** by using waste materials in the production of new products.
- 16. **Waste is used for science** by using waste materials in the production of new products.
- 17. **Waste is used for health and medicine** by using waste materials in the production of new products.
- 18. **Waste is used for food and drink** by using waste materials in the production of new products.
- 19. **Waste is used for clothing and textiles** by using waste materials in the production of new products.
- 20. **Waste is used for furniture and home appliances** by using waste materials in the production of new products.
- 21. **Waste is used for transport and infrastructure** by using waste materials in the production of new products.
- 22. **Waste is used for communication and media** by using waste materials in the production of new products.
- 23. **Waste is used for information technology** by using waste materials in the production of new products.
- 24. **Waste is used for financial services** by using waste materials in the production of new products.
- 25. **Waste is used for legal and professional services** by using waste materials in the production of new products.
- 26. **Waste is used for education and training** by using waste materials in the production of new products.
- 27. **Waste is used for research and development** by using waste materials in the production of new products.
- 28. **Waste is used for innovation and entrepreneurship** by using waste materials in the production of new products.
- 29. **Waste is used for social and community development** by using waste materials in the production of new products.
- 30. **Waste is used for environmental protection and conservation** by using waste materials in the production of new products.



- + Tourism interacts harmoniously with the environment while providing high economic value to New Zealand.
- ♥ We value the experiences international visitors bring to New Zealand. We believe in, and we support, our clean green image.





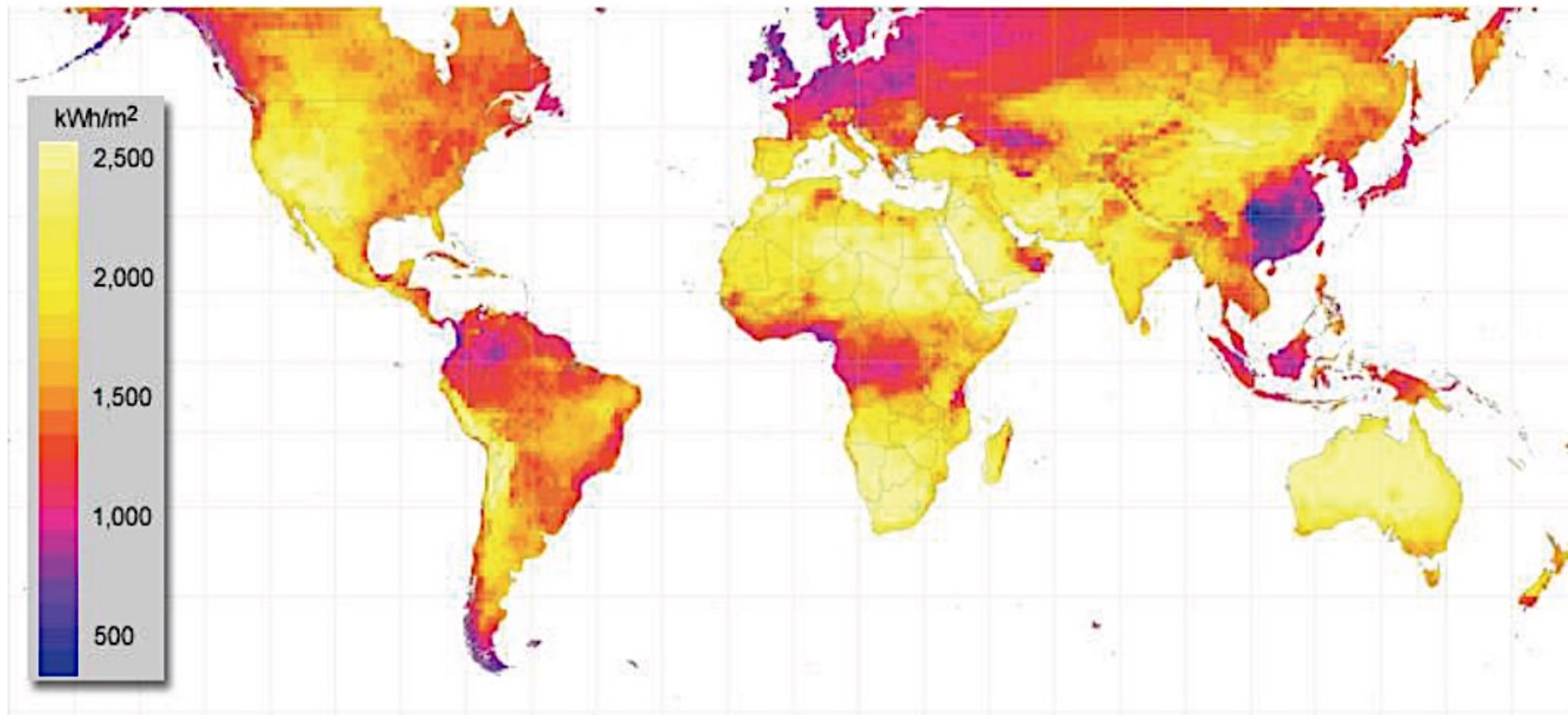
# Tuhoe's Te Uru Taumatua

- ...the first Living Building in New Zealand



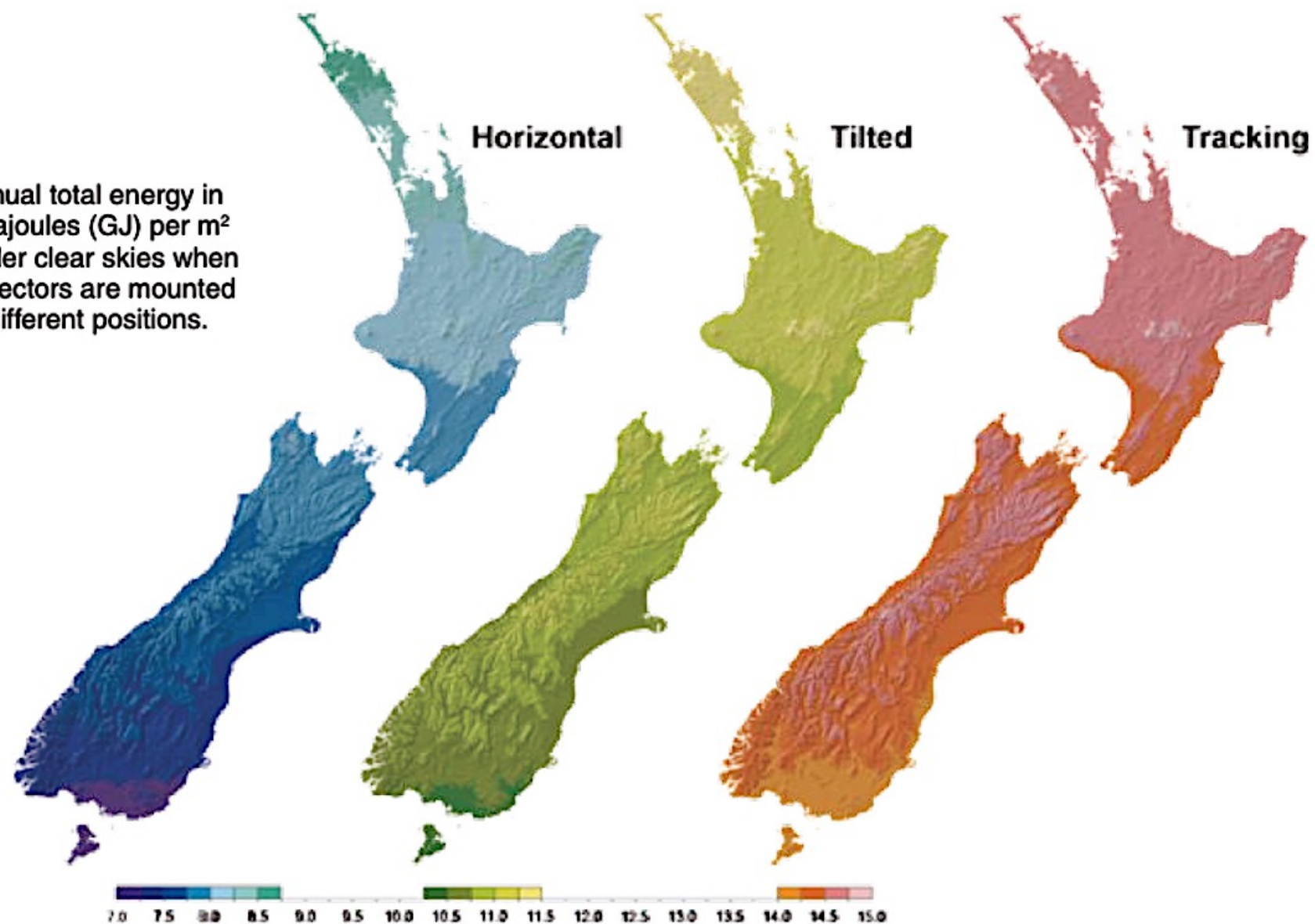
# Tapping into solar energy

Yearly sum of direct irradiance





Annual total energy in gigajoules (GJ) per m<sup>2</sup> under clear skies when collectors are mounted in different positions.



Source : <https://www.niwa.co.nz/>



## New Zealand Smart Grid Forum

[Publications](#)[Meeting 7: 4 August 2015](#)[Meeting 6: 6 May 2015](#)[Meeting 5: 11 February 2015](#)[Meeting 4: 4 November 2014](#)[Meeting 3: 6 August 2014](#)[Meeting 2: 6 May 2014](#)[Meeting 1: 3 April 2014](#)[Forum establishment](#)

# New Zealand Smart Grid Forum



## Architecting a future electricity system for all New Zealanders

The Ministry of Business, Innovation and Employment, with the support of the Electricity Networks Association has commissioned a Smart Grid Forum. The Forum brings together relevant parties from business, scientific and academic circles, along with policy makers, regulators and consumers.

The Forum's objective is to advance the development of smart electricity networks in New Zealand through information sharing and dialogue, supported by analysis and by focussed work-streams where these are considered to be appropriate. To achieve this purpose, the Forum will:

- Promote its objectives to parties involved in smart electricity network development to encourage the active participation of the diverse elements of the power demand and supply chain in Forum activities
- Promote and facilitate a collective understanding of current smart electricity network developments
- Collaborate and seek synergies with associated initiatives in areas such as electricity load control, innovation, data sharing, system security and data security, and consumer empowerment
- Identify barriers to investment and the means to address those barriers; and
- Develop and communicate a collective understanding of relevant developments in other jurisdictions.

**NEW  
ZEALAND  
SMART  
GRID  
FORUM**

*Architecting a  
future electricity  
system for all  
New Zealanders*



# Creating a new energy future



**Latest news - Vector Network News for the week ending 18 October 2015**



**Operational performance for the quarter ended 30 September 2015**



**Make your home a Green House**

With Vector Solar, for as little as \$50\* per month



**Prevent a big power cut with a little trim**

As a property owner you play a key role in helping keep the power on in your...







# T3CONNECT

THE FUTURE IS LOCAL - CONNECT



[HOME](#) [YOU](#) [MEMBERS](#) [EVENTS](#) [IMAGES](#) [BUSINESSES](#) [T3 FREE LISTINGS](#) [BLOGS](#) [BUSINESS/ORGANISATION/T3 GROUPS](#)

T3:Transition Town Thames:  
"Most sustainable  
improvements in community  
occur when citizens discover  
their own power to act... "

## USEFUL LOCAL LINKS

[What's on@Thames Cinema  
TCDC](#)

[CoromandelFM](#)

[Thames Information Centre](#)

[The Coromandel.com](#)

## BLOG POSTS



### **Beekeeping Plus Internship Applications Open!**

Posted by [Wilderland Trust](#)  
on June 19, 2015 at 12:08



### **STOP Plastic Pollution from Aquaculture rope offcuts**

Posted by [Andrea P](#) on May  
24, 2015 at 9:57

[+ Add a Blog Post](#)

[View All](#)

## EVENTS

**October 31**  
Saturday



### **Art that Breathes, Walks, Talks & Dances: Free Workshops**

October 31, 2015 from 10am to 3pm -  
Grahamstown Hall.



### **Rocky Horror Picture Show - 40th Anniversary** October 31, 2015 from 10pm to 11:45pm - Thames Embassy Theatre (Cinema)

**November 1**  
Sunday



### **Vjekoslav Nemesh - Painting Workshops** November 1, 2015 from 11am to 5pm - GBD Function Room, Junction Hotel, Grahamstown, Thames



### **Denise Norton Live - from Vienna to Broadway** November 1, 2015 from 3pm to 5pm - Thames War Memorial Civic Center

**November 3**  
Tuesday



### **Miho's Jazz Orchestra** November 3, 2015 from 7:30pm to 9:30pm - Kauaeranga Hall

[+ Add an Event](#)

[View All](#)

## CULLED FROM THE MEDIA...

# The psychology of climate change

Welcome to  
T3Connect

**Sign Up**  
or **Sign In**

Or sign in with:



## BUSINESS/ORGANISATION/T3 GROUPS



**T3 Energy Group**  
2 members



**Food group**  
4 members



**Waste Not**  
4 members

[View All](#)

## THAMES WEATHER AND TIDES

[Thames Weather](#)  
[Rain Radar](#)

[Thames Tides](#)  
Marine Forecast:

# Gisborne's plan offers lessons for us all

#GIGATOWN



LOG IN | SIGN UP



WHAT IS GIGATOWN?

GIGATOWN LEADERBOARD

The Idea

The Winner

The Finalists

The Prize

FAQs

GISBORNE

NELSON

TIMARU

WANAKA

*Finalist - Gisborne*

Gisborne put up a fierce battle as one of the five Gigatown finalists.

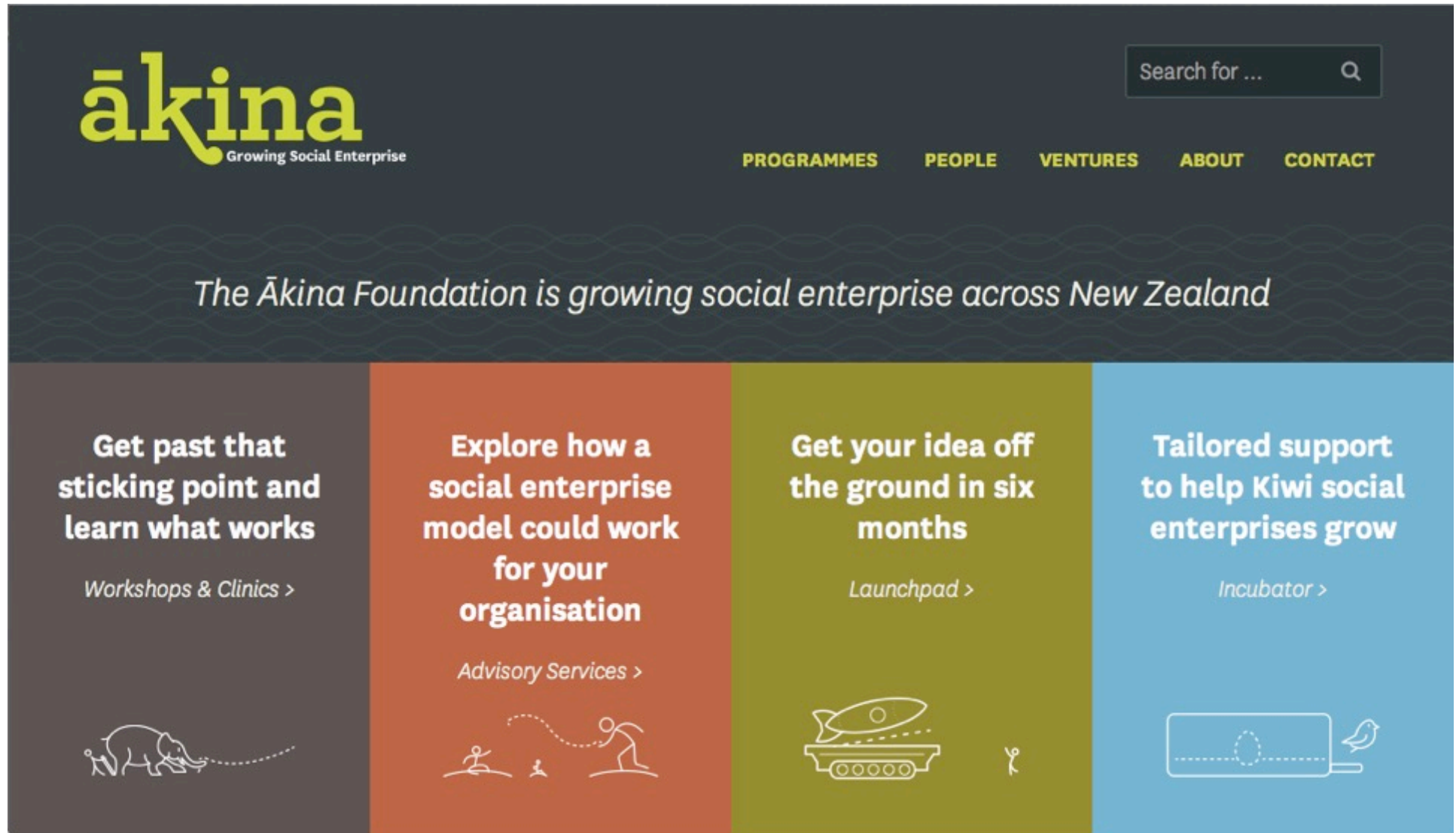
Watch the video summary or check out Gisborne's plan to find out more.

**CHECK OUT THE PLAN**



# Social enterprises

- ..delivering social and sustainability outcomes in business-like ways



The screenshot shows the homepage of the Ākina Foundation. The header features the Ākina logo in yellow and green, with the tagline "Growing Social Enterprise" below it. To the right of the logo is a search bar with the placeholder text "Search for ...". Below the logo, there is a navigation menu with the following links: PROGRAMMES, PEOPLE, VENTURES, ABOUT, and CONTACT. The main content area has a dark blue background with a wavy pattern. A central text block reads: "The Ākina Foundation is growing social enterprise across New Zealand". Below this, there are four colored boxes, each representing a different service offered by the foundation. Each box contains a title, a subtitle, and an icon.

**ākina**  
Growing Social Enterprise

Search for ...

PROGRAMMES PEOPLE VENTURES ABOUT CONTACT

*The Ākina Foundation is growing social enterprise across New Zealand*

**Get past that sticking point and learn what works**  
*Workshops & Clinics >*

**Explore how a social enterprise model could work for your organisation**  
*Advisory Services >*

**Get your idea off the ground in six months**  
*Launchpad >*

**Tailored support to help Kiwi social enterprises grow**  
*Incubator >*

Icons: A stick figure with a dotted line, a stick figure with a dotted line, a stick figure with a dotted line, a stick figure with a dotted line.

# EnerNOC

[www.enernoc.com](http://www.enernoc.com)

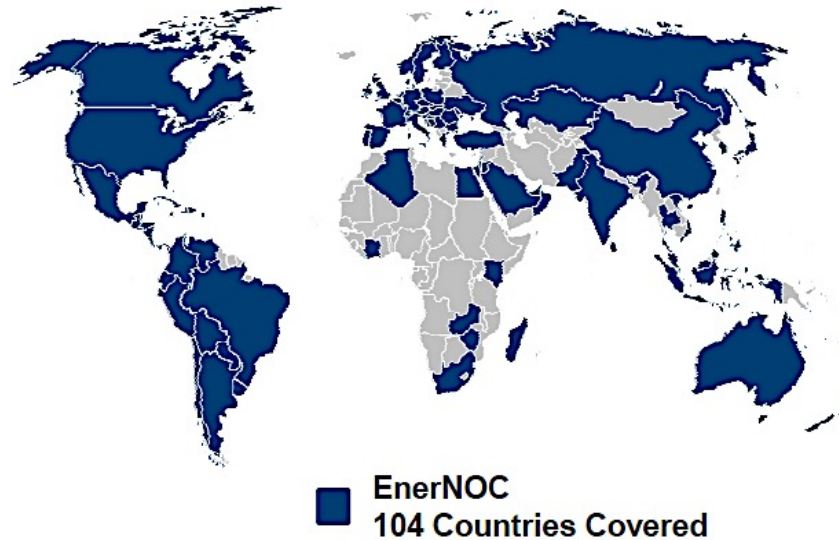


**Boston**

Our Head Office

Our Network Operations Centre (NOC) runs our global Demand Response (DR) business and can dispatch 10,000MW

## Selling load-shedding (“negawatts”) into the NZ generation market



### Commercial Buildings and Institutions

Unlock smart solutions to use less energy, identify waste, and optimize your portfolio.



### Industrial and Manufacturing Facilities

Gain visibility into your energy use and take control of costly peak demand charges.



### Utilities and Grid Operators

Are you a utility, system operator, or energy retailer? We can help you meet your demand-side resource goals.



# *Clean cars for blue skies!*



## Our Team



### **Carl Barlev**

Founder & Managing Director

As an engineer in the power industry, Carl worked on energy projects around the world. With his strong passion for sustainability, he was drawn to the electric vehicle industry and in 2013 he had the exciting role of helping Tesla Motors build their first supercharger stations in Europe. Carl moved back to New Zealand in 2014 and immediately started promoting electric vehicles. He entered his Tesla Model S in EVelocity and then joined #LeadingTheCharge for an EV Tour of NZ. After completing a 3-month contract with Drive Electric, Carl was able to shift his focus to his role as Managing Director of Blue Cars. Carl is also a director of Charge.Net.NZ.

# Community power – new models

- *Help achieve...*
- Greater gains in energy poverty, energy efficiency
- Wider sustainability understanding & action
- Builds community collaboration
- Growth of the local economy
- Easy to see many more ways to work on the demand side
  - E.g. insulation *plus* e.g smart meters, more home management, better home design, electric vehicles, etc.
- Increasingly practical to contribute to the supply side...’tho still very slow
  - Generation & distribution technology changing fast...in **local favour**
  - No economic or regulatory stability...big fights ahead
  - Incumbent generator / retailers...will lose their dominance
- So, community power is integral to the new electricity system
  - ...get involved...cautiously!



# Pathways to progress

- **Smart Energy → Strong Economy → Resilient Community**
- Electricity sector is changing very fast
  - ...beware those incumbents trying to hold back progress
- Best strategies
  - ...fast, incremental progress with clear, long term goals
  - ...morphing, adapting to incipient trends and opportunities

# Pathways to progress

- **Smart Energy → Strong Economy → Resilient Community**
- **Learn fast → partner widely and well → experiment continuously**
- Achieve the concrete wins available now, and more as systems evolve
- Earn financial returns
  - ...and map health and social benefits – one day they will be rewarded
- **Connect deeply...Locally → Regionally → Nationally → Internationally**





- *We've turned our 73-year-old house into a net zero energy home, economically*









- Our energy consumption:
- 2007: 21,000 kWh equivalent (almost half was gas for heating)
- 2014: 5,500 kWh for the house
  - + 1,250 kWh for the car





- 2004 Prius, worth \$10,000
  - Was:
    - Electric: <1.5km @ 60 km/h max
    - Hybrid: 20 km per litre (5 lt/100km)



- 2004 Prius
  - Now:
    - Conversion cost: \$14,000
      - + Car cost: \$10,000
    - = \$24,000 for a plug-in hybrid
      - ½ price cf new Prius plug in
    - Electric: <70km @ 80 km/h max
      - Hybrid: <70 km per litre (1.25 lt/100km)



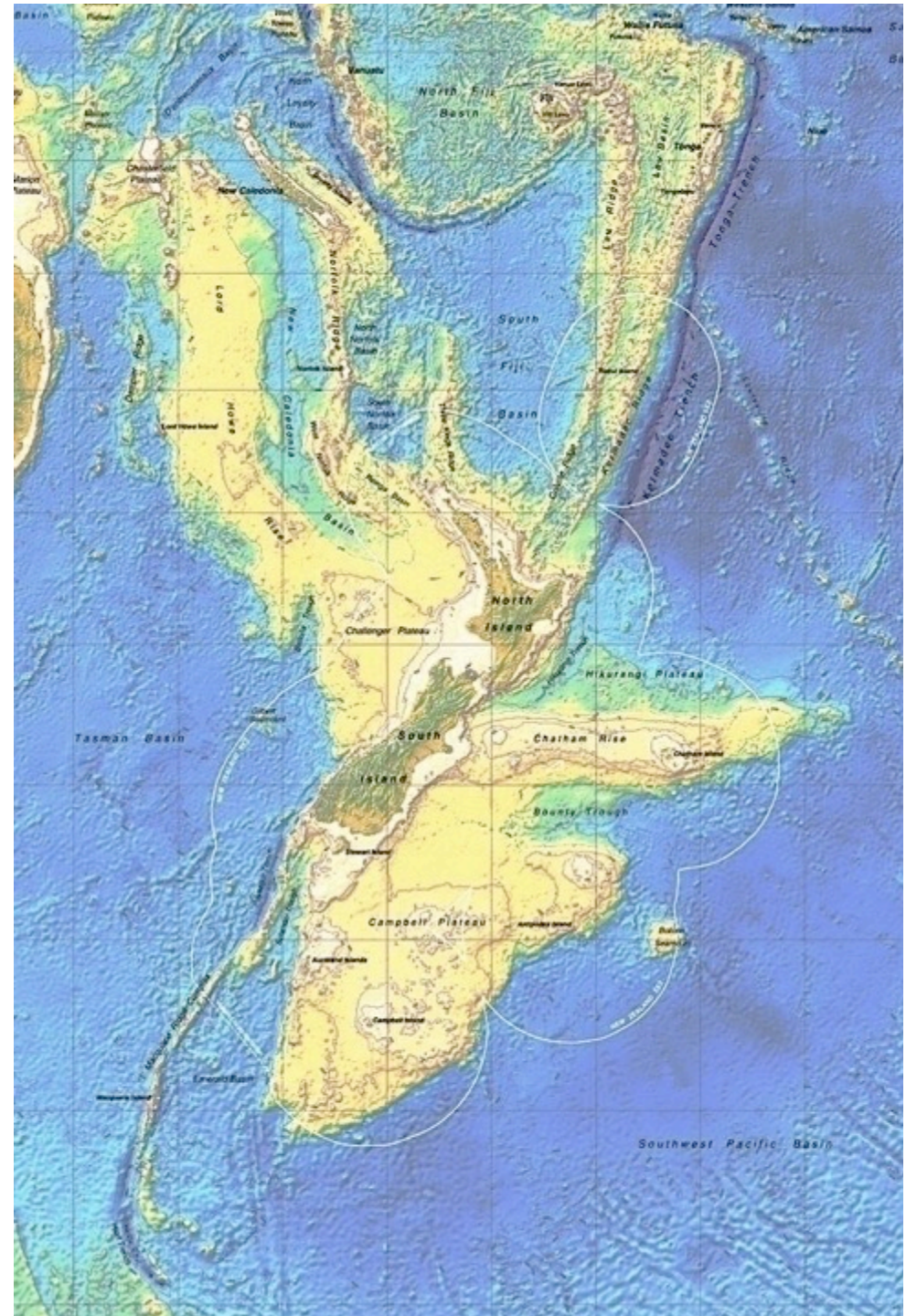
# Growing up with electric rubbish trucks 1950-72





# Our future...and the ultimate challenges

- NZ Land: 270,000 sq km
  - *Australia's 28x NZ*
- NZ Oceans: 5.8m sq km
  - *4<sup>th</sup> largest in the world*
  - *Australia's 1.4x NZ's*
- Huge responsibility:
  - ...to nurture
  - ...to use responsibly
  - ...to sustain us
  - ...we get \$184bn of ecosystem services for free
- We need new values, systems, learning, collaboration:
  - ...to be sustainable
  - ...to offer hope to the world





A satellite photograph of Earth from space, showing the Americas and the Atlantic Ocean. The landmasses are green and yellow, with white clouds covering the oceans and parts of the continents. The image is oriented vertically, with the top of the frame showing the northern part of the continents.

*“You’ll have  
no future...*

*...if you don’t  
make one  
for yourself”*

*Johnny Rotten*