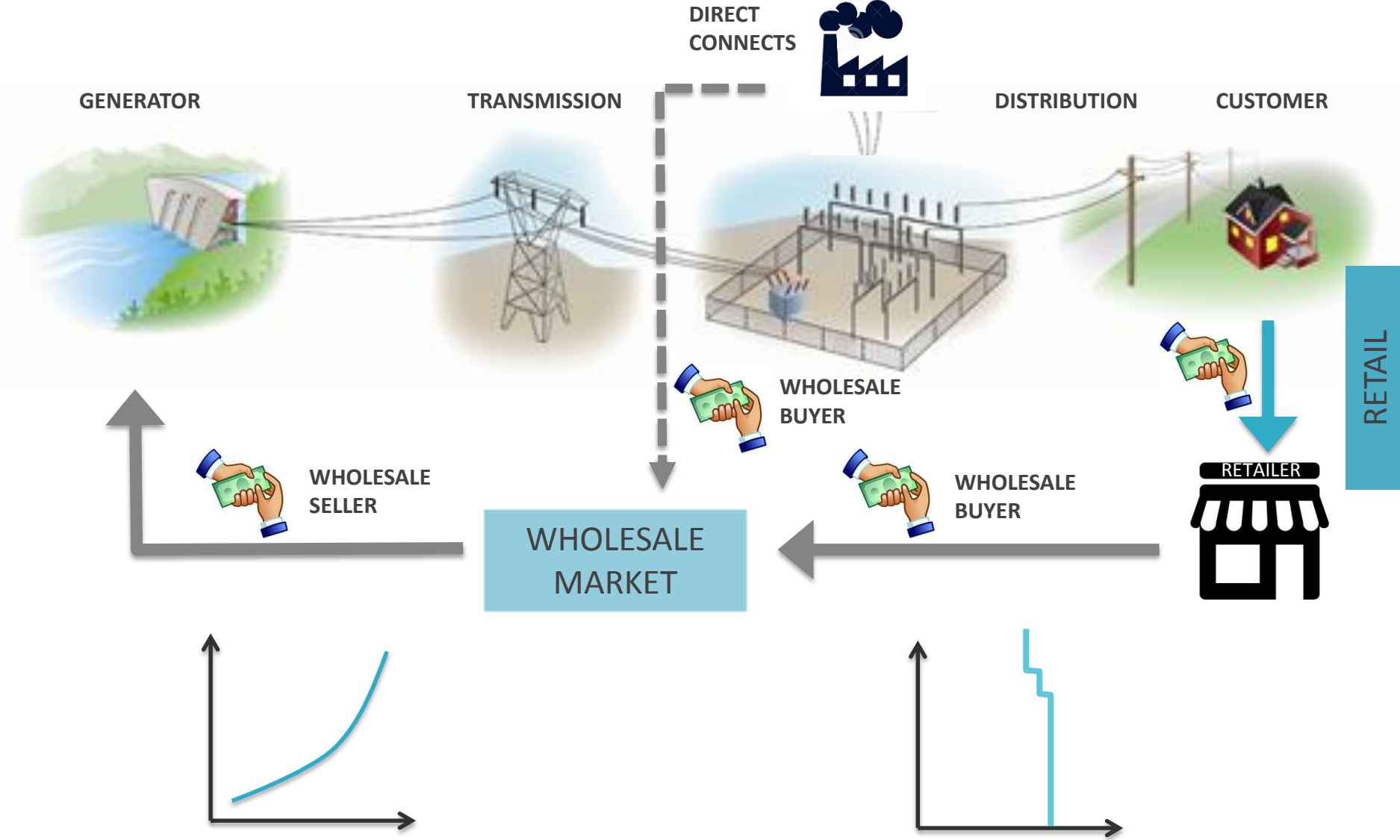

Stephen Batstone

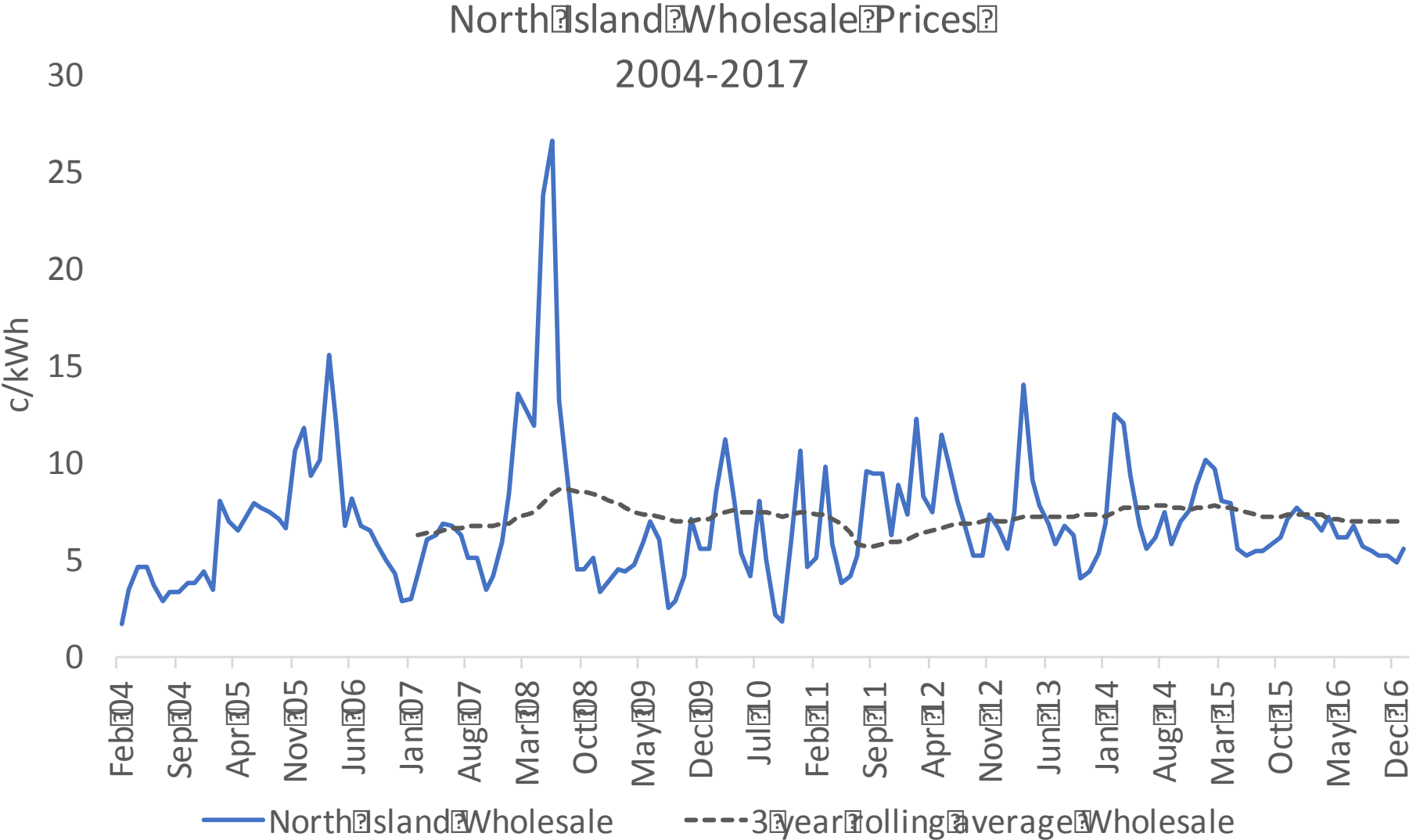
THE NZ ELECTRICITY MARKET: TEETERING ON THE EDGE OF TRANSFORMATION?



In a sleepy corner of the South Pacific

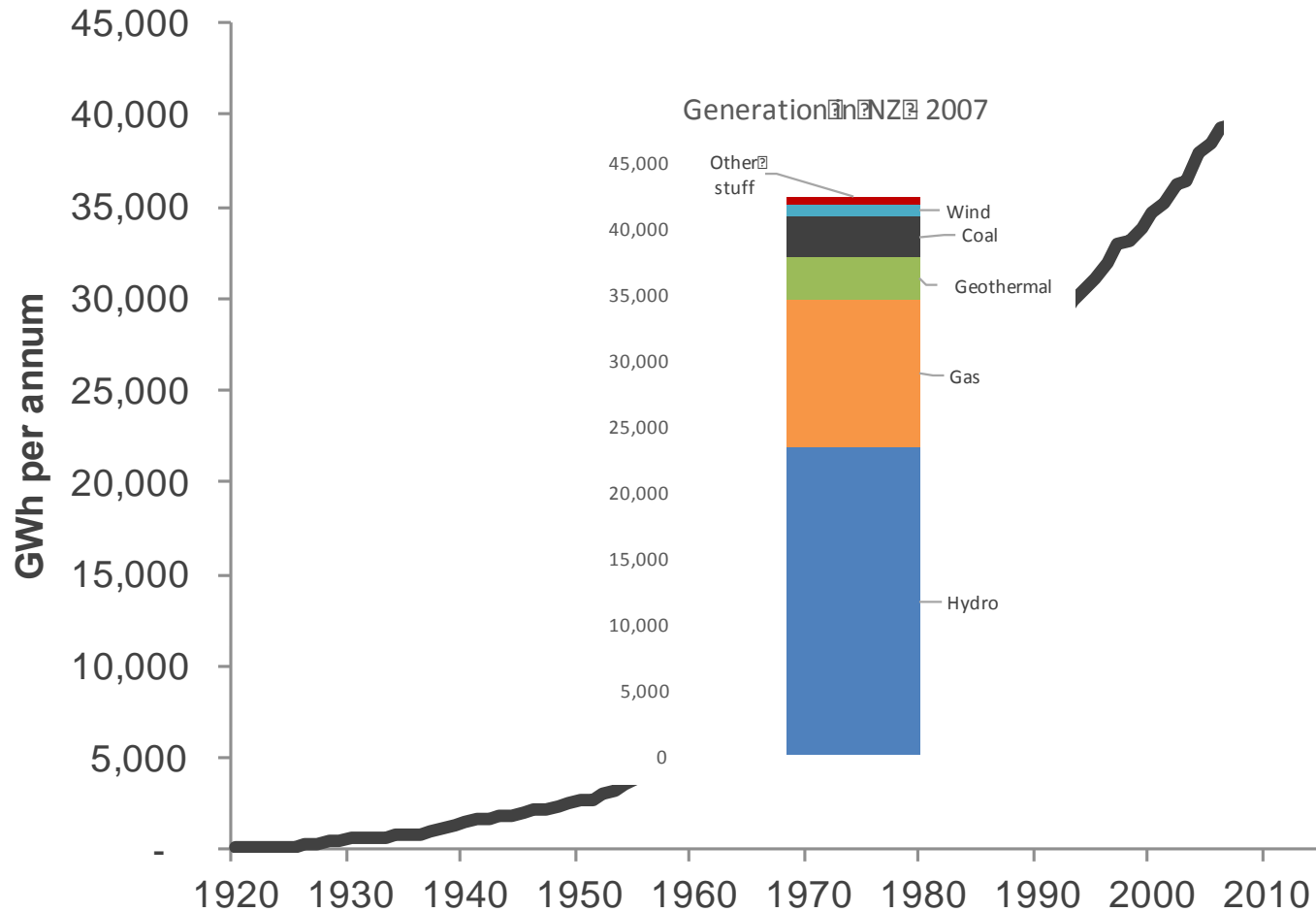


Impact on price



Reliable growth....

NZ Electricity Demand

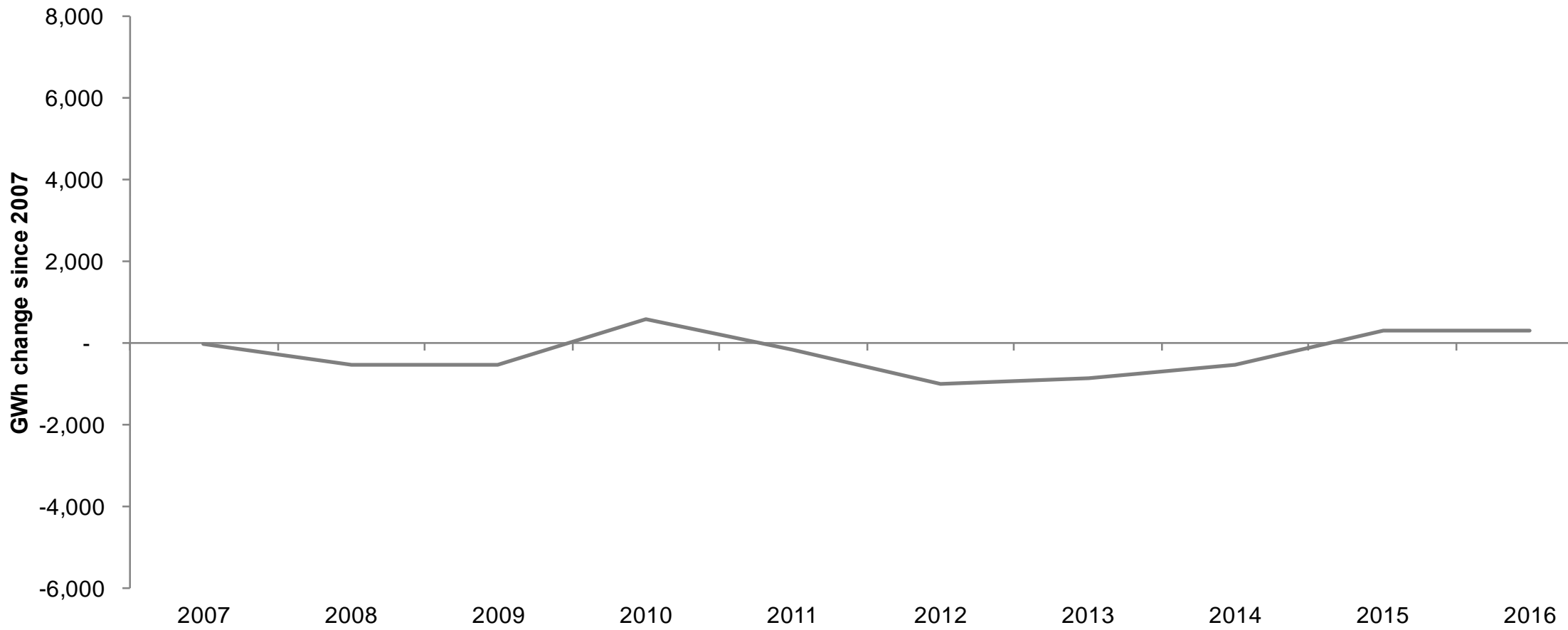


Growth since 2006:

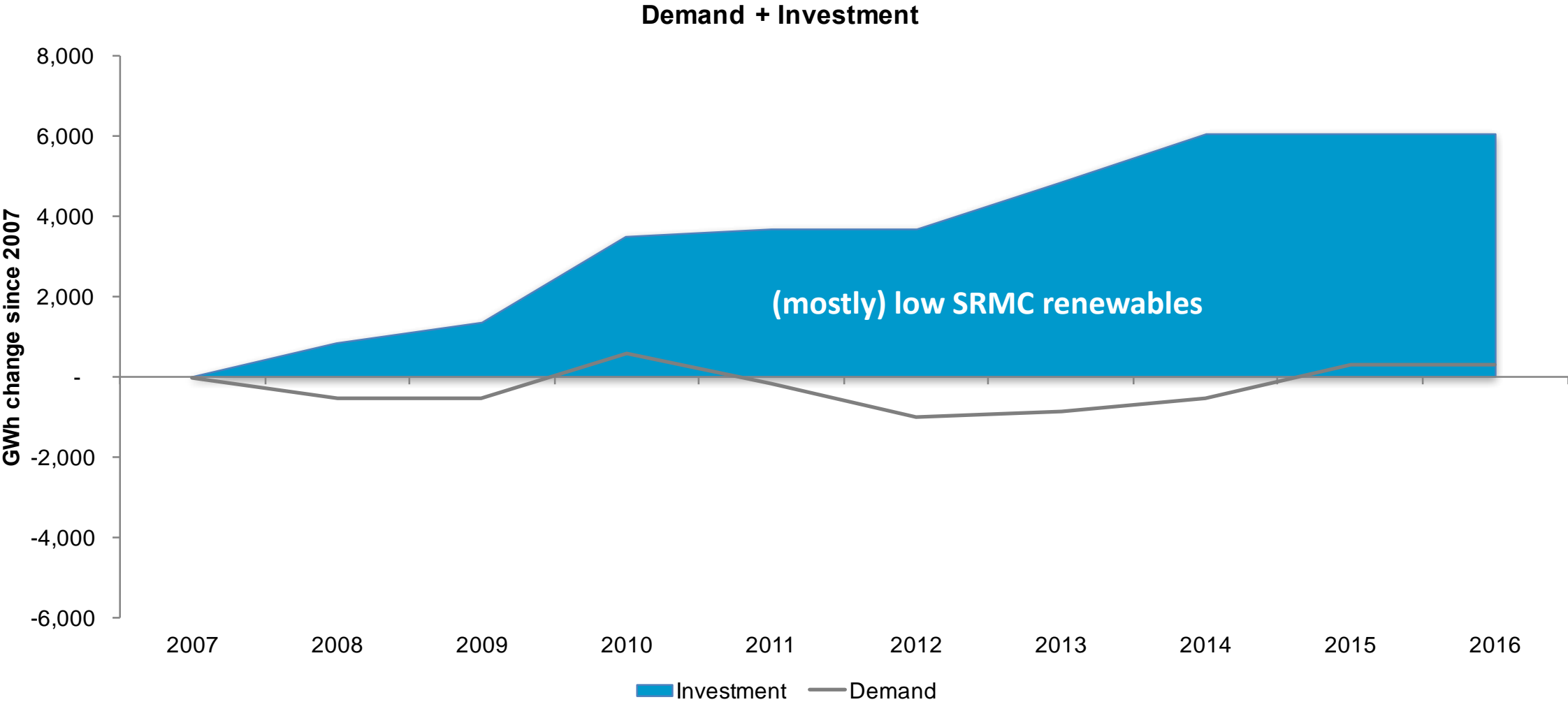
- Agriculture: **+1,103 GWh**
- Industrial: **-600 GWh**
- Commercial: **+690 GWh**
- Residential: **-116 GWh**

Demand 2007-2016

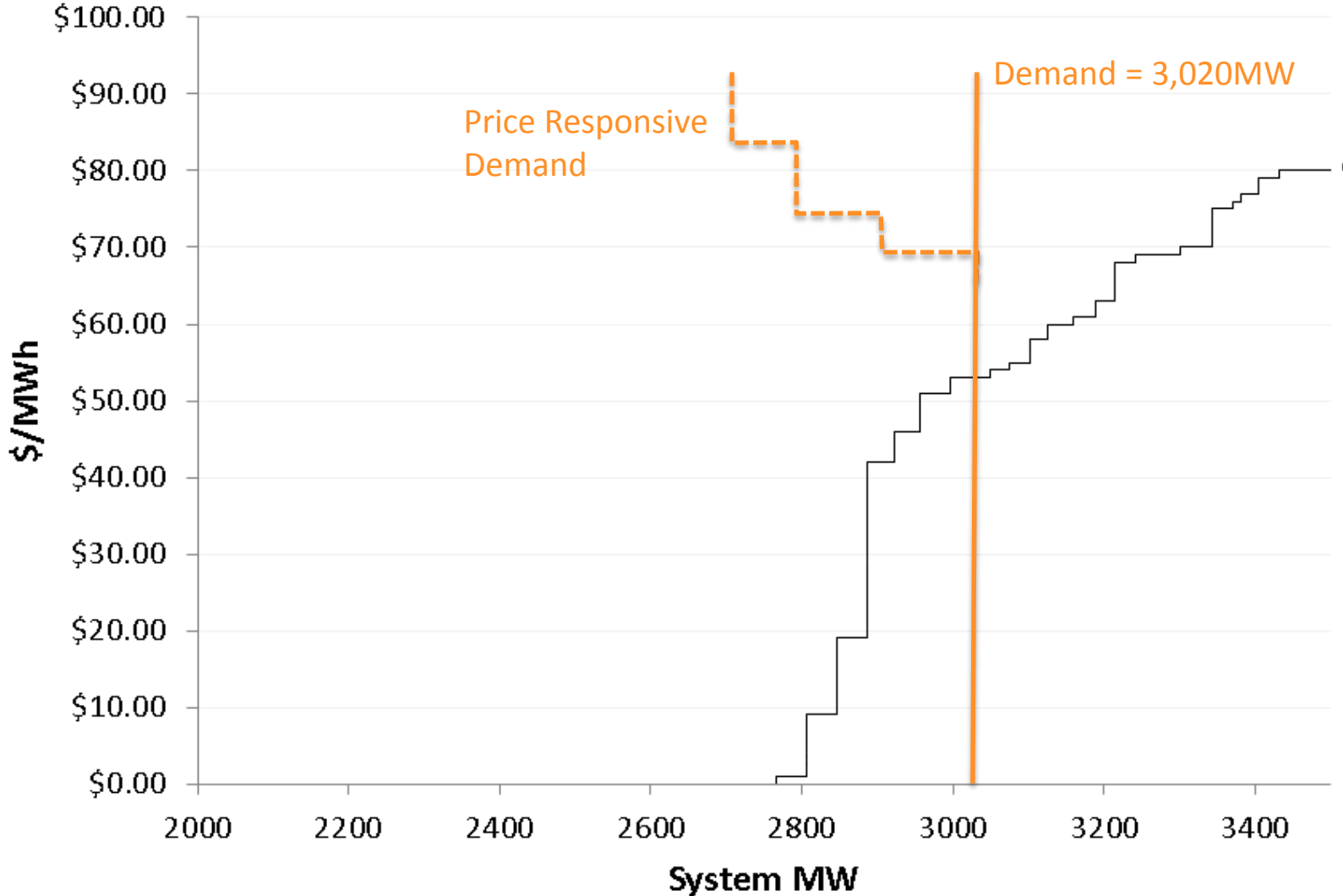
Demand



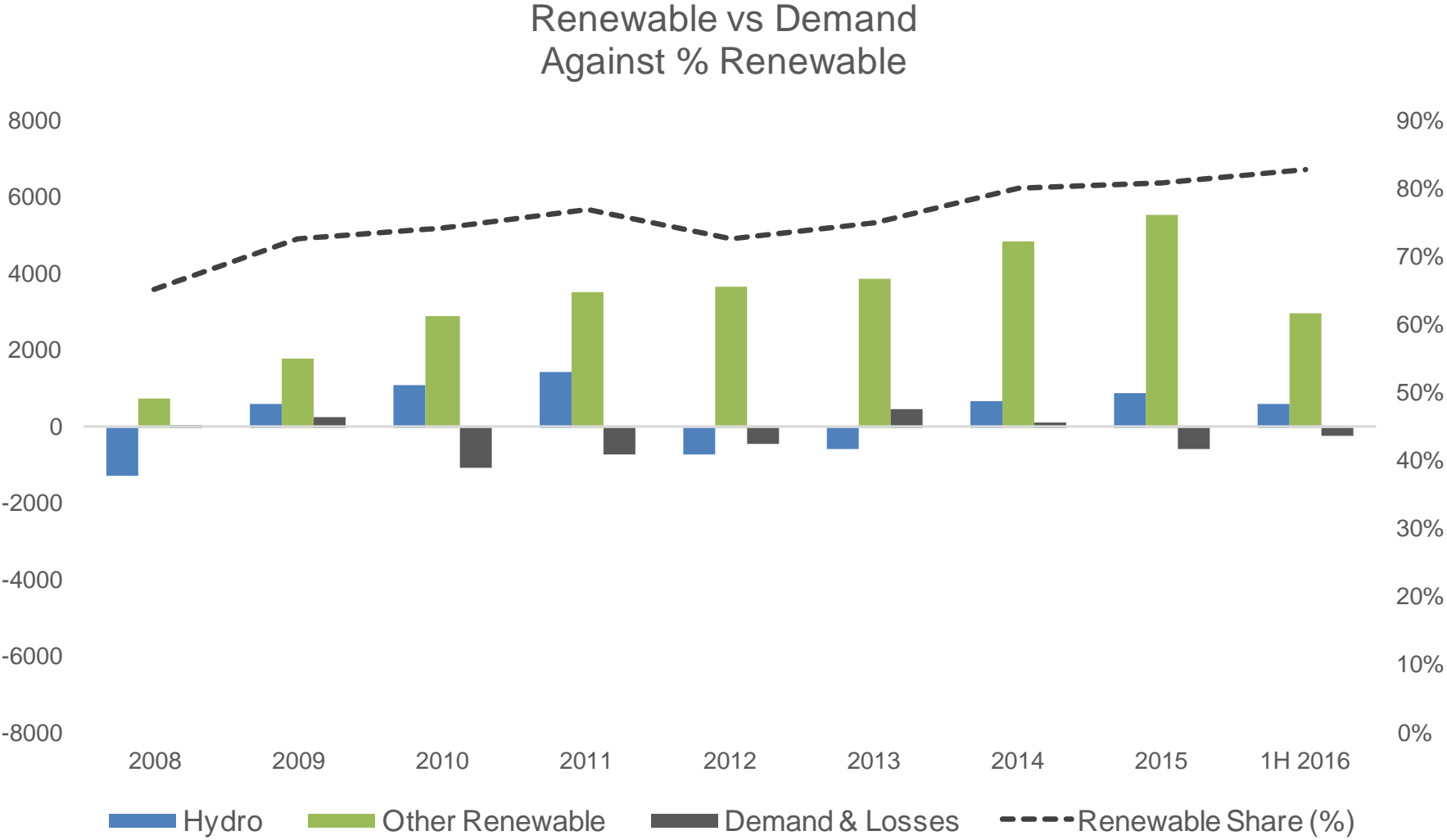
And we built...



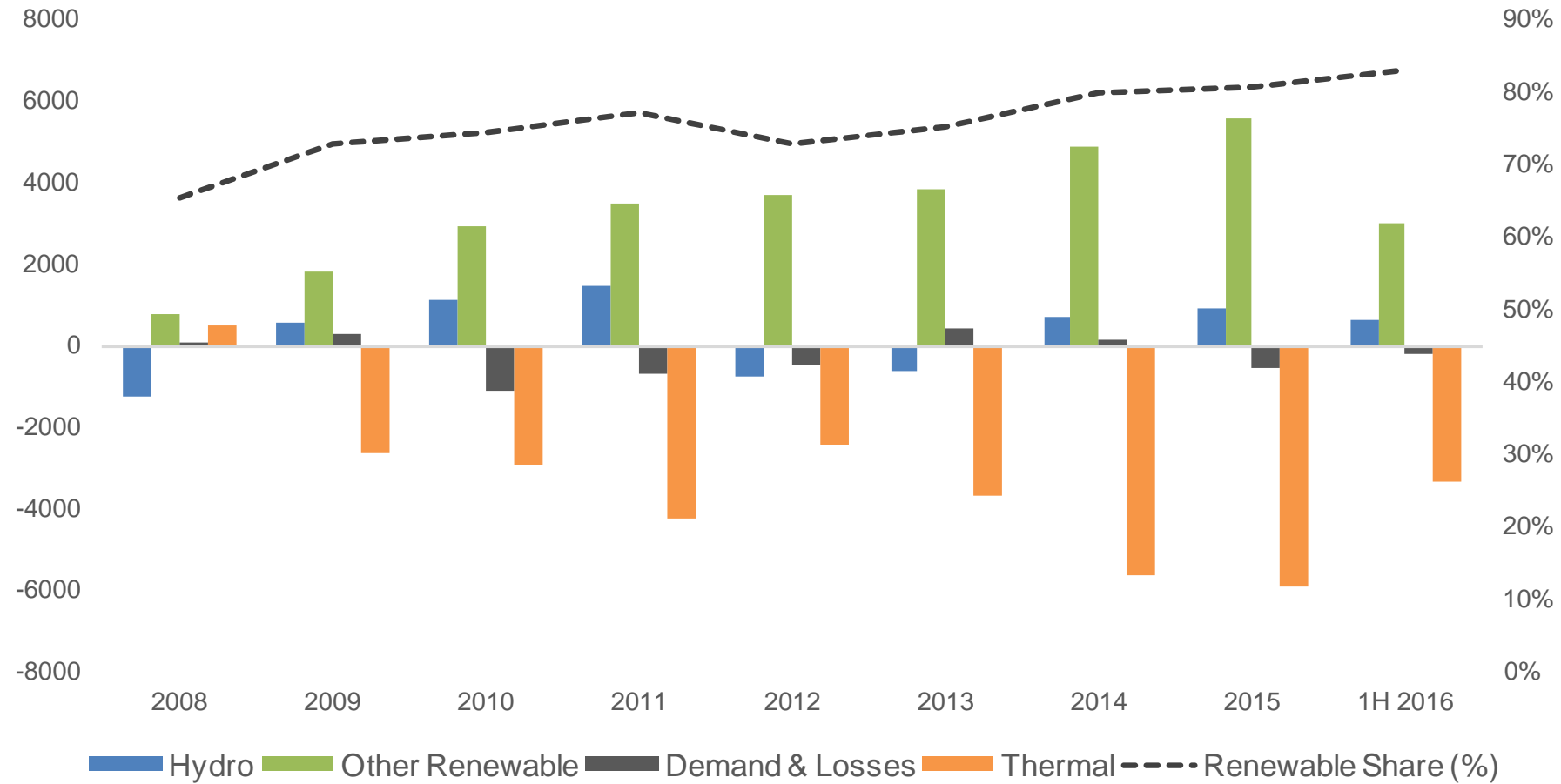
Wholesale Market effects



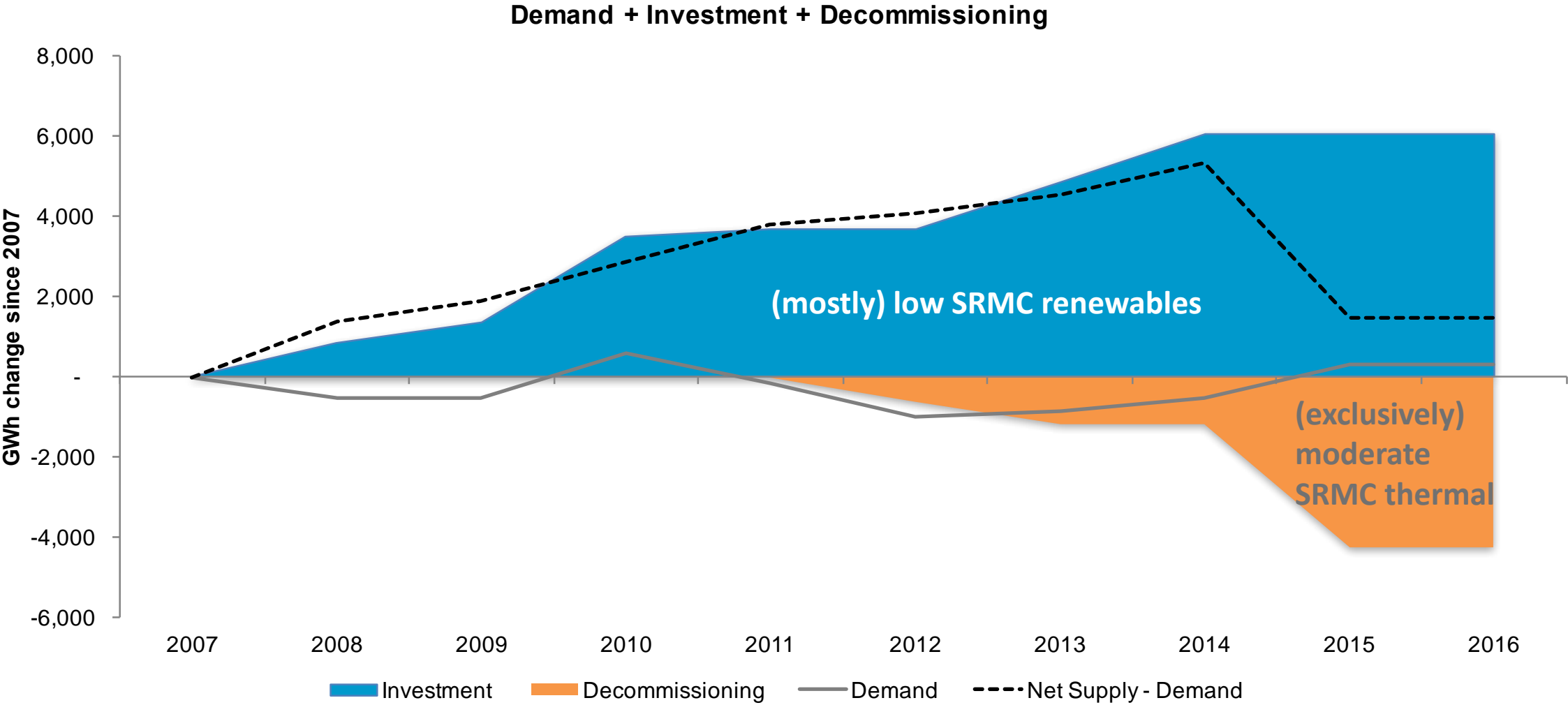
Wholesale market



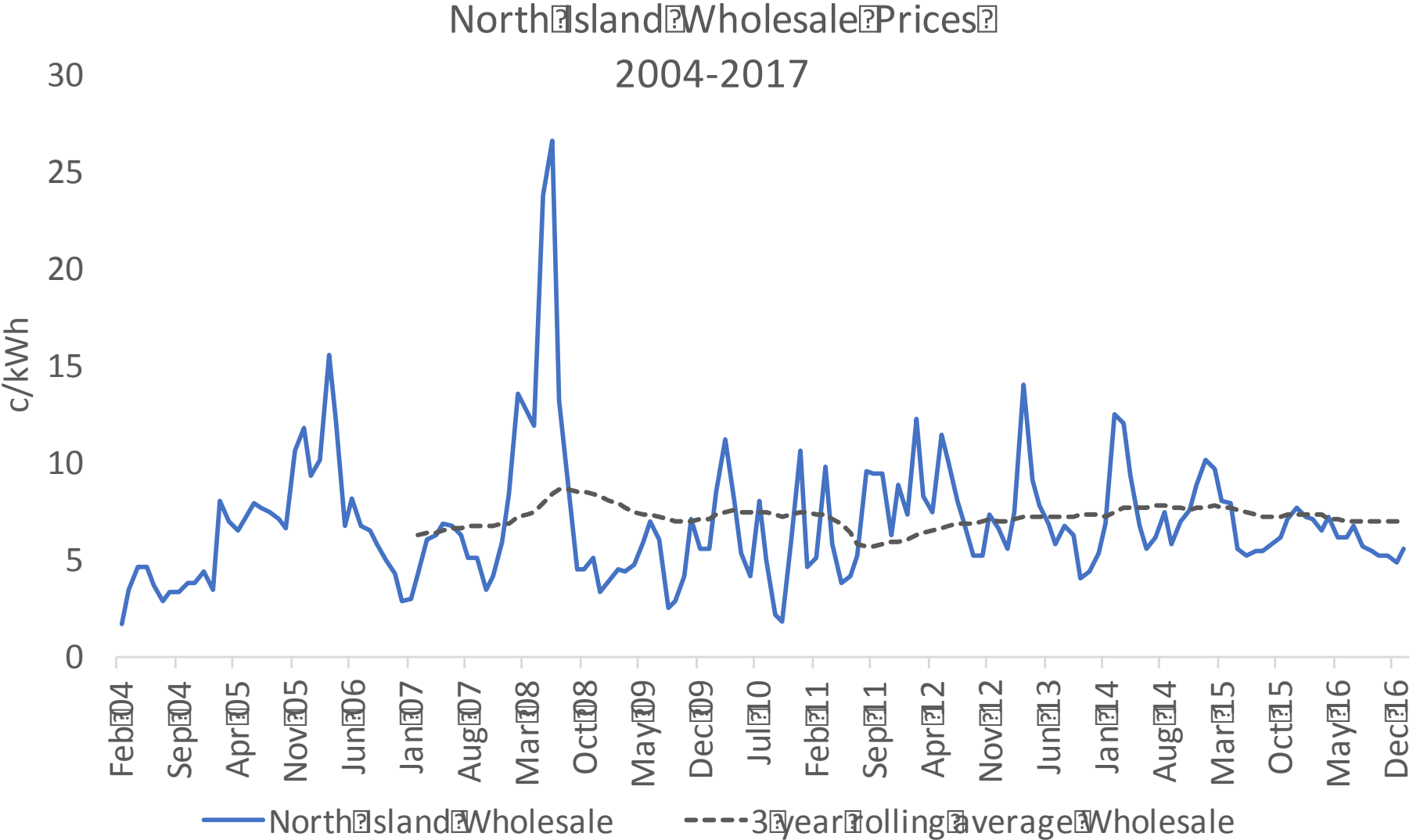
Thermal vs Renewable vs Demand Against % Renewable



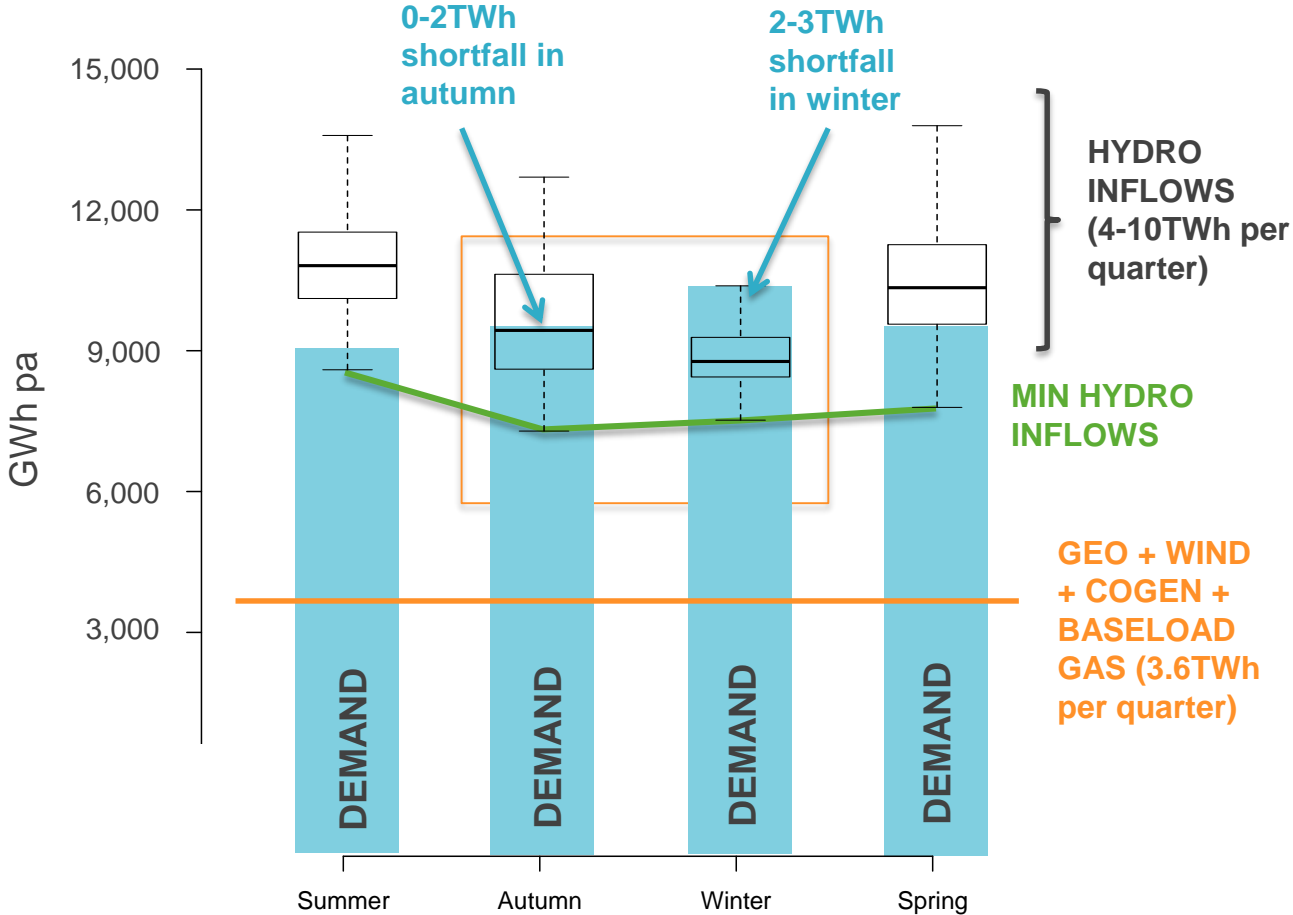
Then we un-built



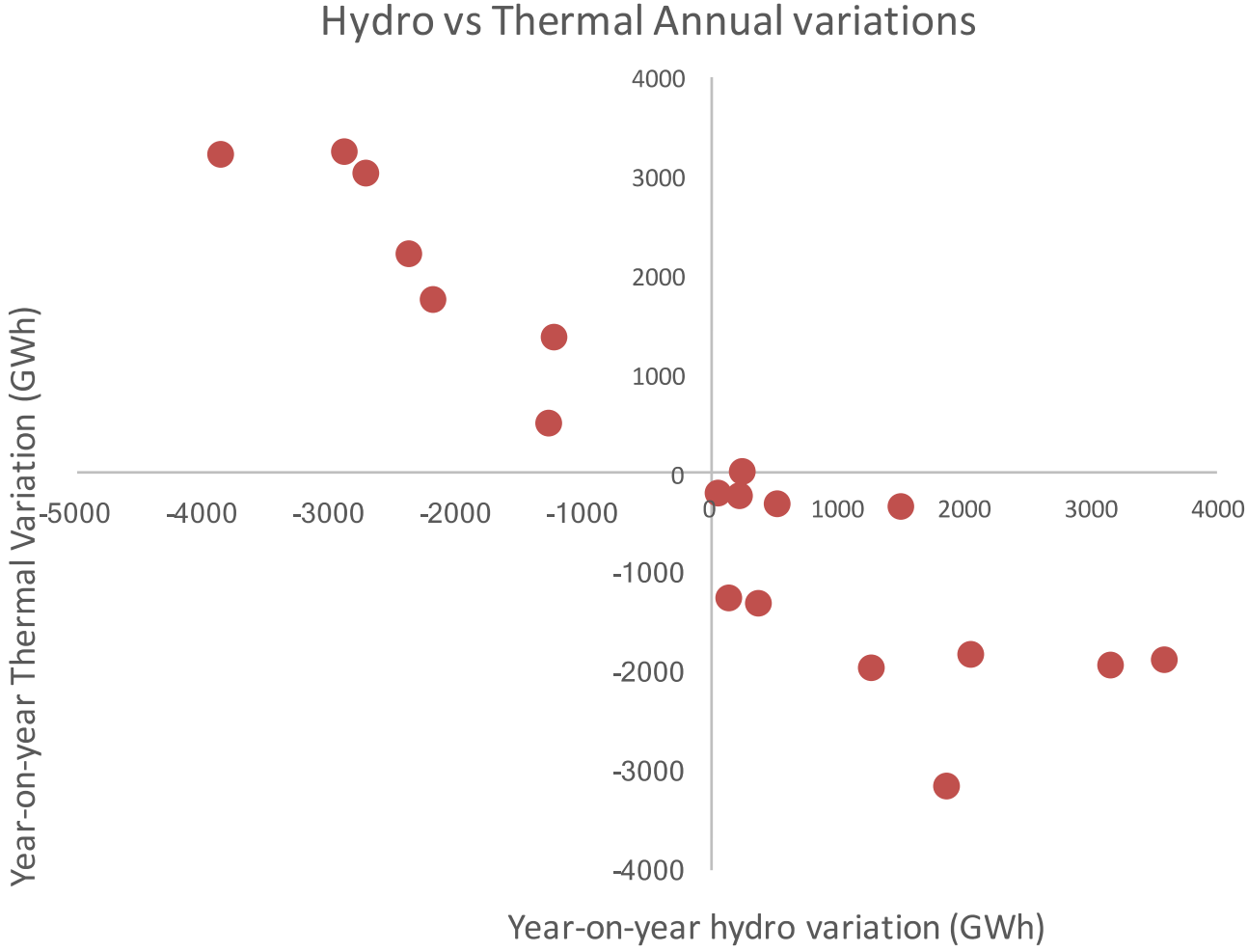
Impact on price



Hydro – managing security of supply



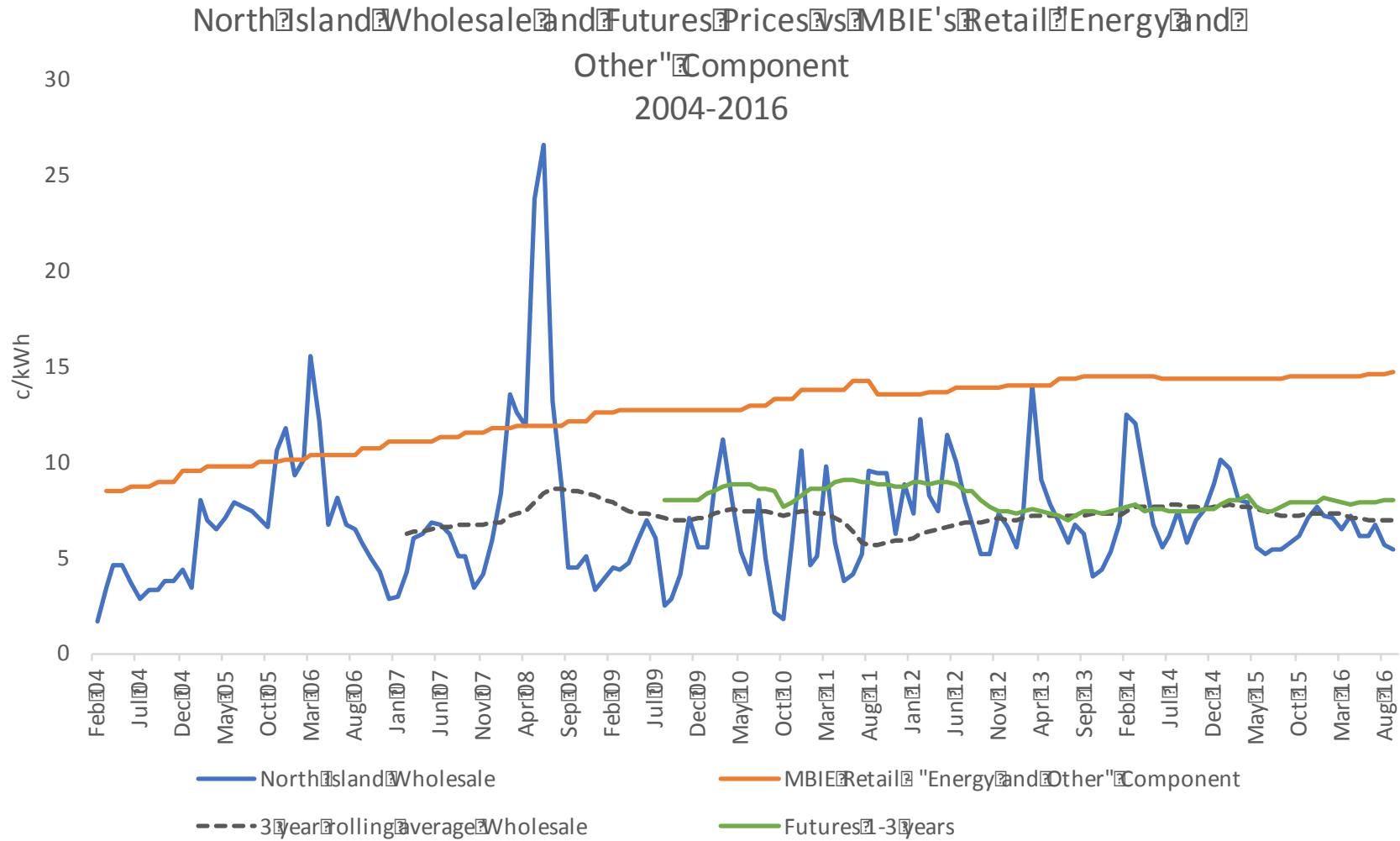
Managing hydro security



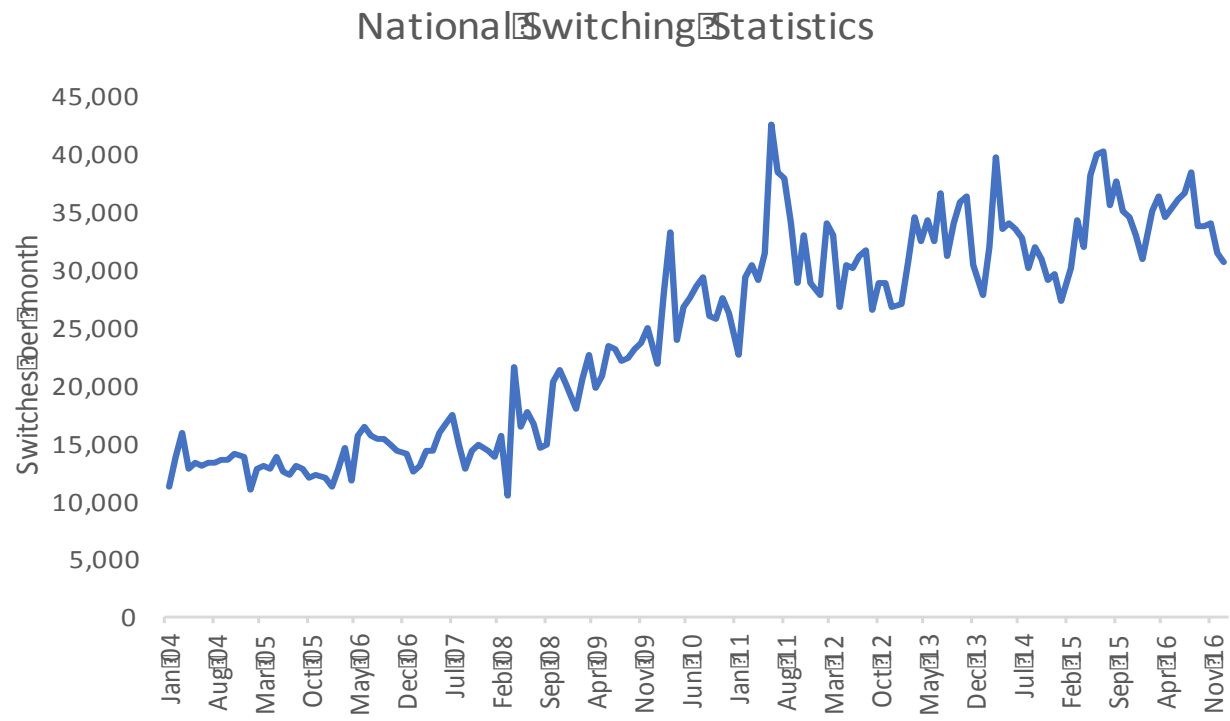
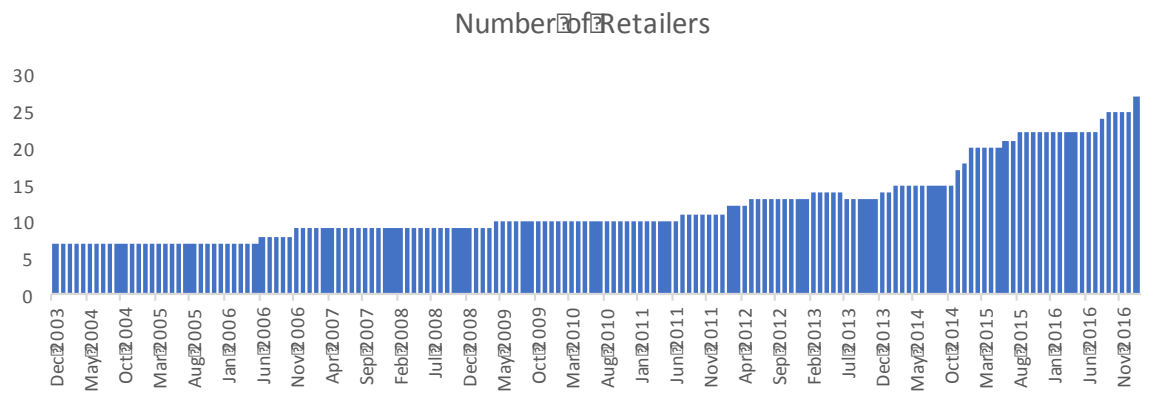
MEANWHILE, ON THE DEMAND SIDE...



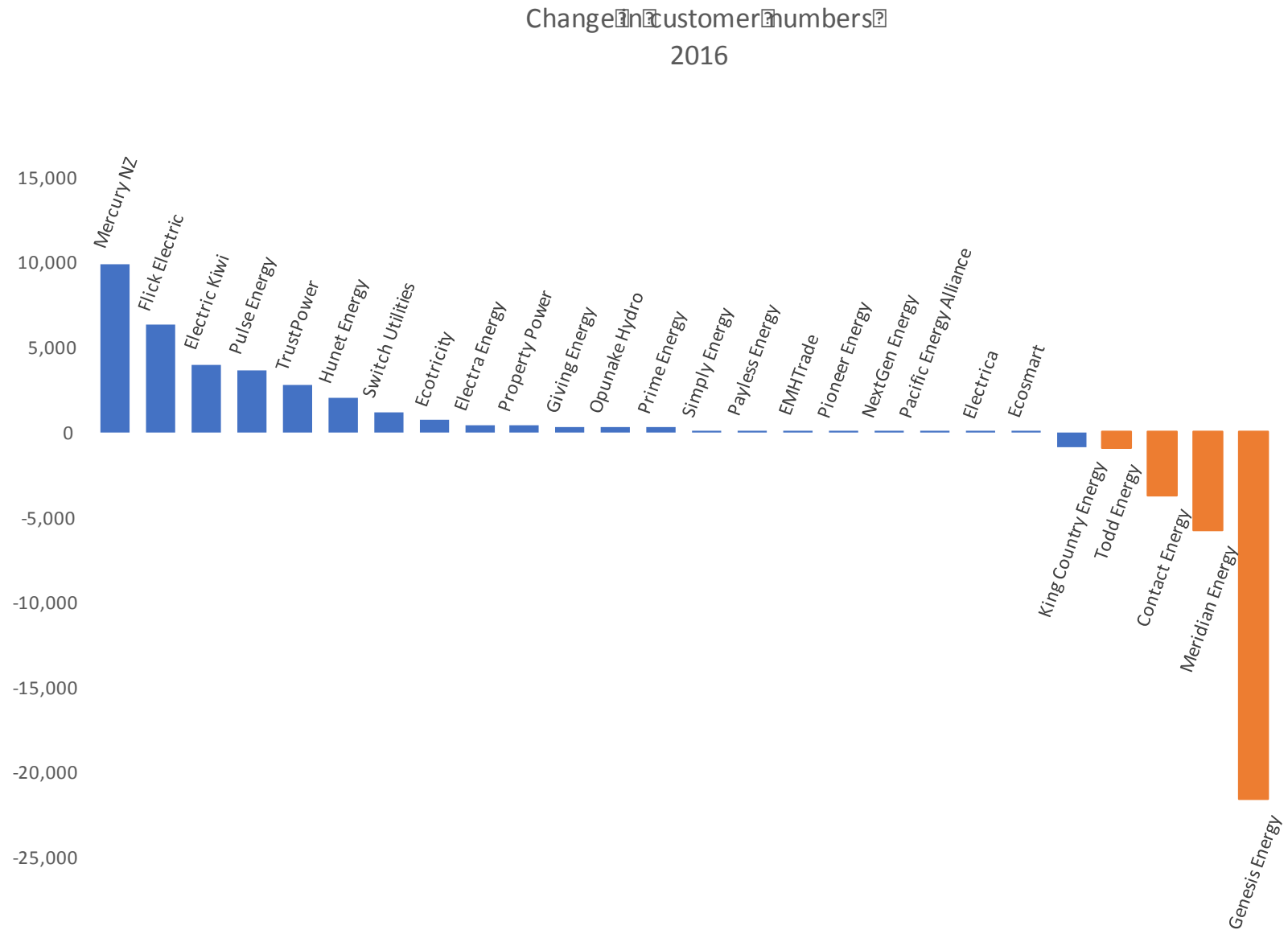
New retail?



Switching and new retailers




Switching, competition and disruption?




Technology – Disruption?




SMOKE DETECTOR




WEATHER STATION




LIGHTING



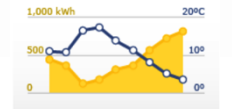
SECURITY



HEATING & COOLING



ENERGY MONITORING



Technology – the quiet disruptors?



Or even just....



So...run that by me again?

Something has flattened demand...

Combined with (attractive) investment in renewables...

Softened prices, increased security levels and attracted new retailers...

Triggering decommissioning of thermals...(**what a market would do**)

Which tightened security of supply again...

But achieved higher renewable penetration....

But while the lakes stay full(ish)...

Prices stay low...

People are switching to [insert name of small retailer]

And solar gets cheaper....

And demand doesn't grow....

WHAT'S GOING TO HAPPEN NEXT?

Some critical uncertainties...

What happens when the lakes next go dry?

What will the next investment be?

- A big power station? Thermal or renewable?
- Lots of solar panels?
- EVs?
- LEDs?

What will happen to Tiwai? Households? Dairy? Irrigation? Tourism? Industry?

If customer data and technology gets unleashed

- What's possible?
- Or don't people care?
- Or do we not care that they don't care?

What about Paris?

- Opportunities for electrification: cars, space/water heating
- How high will we climb with renewables? As a market? Policy?

QUESTIONS?