

# The Hydrological Modelling Dataset (HMD)

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# Acknowledgements

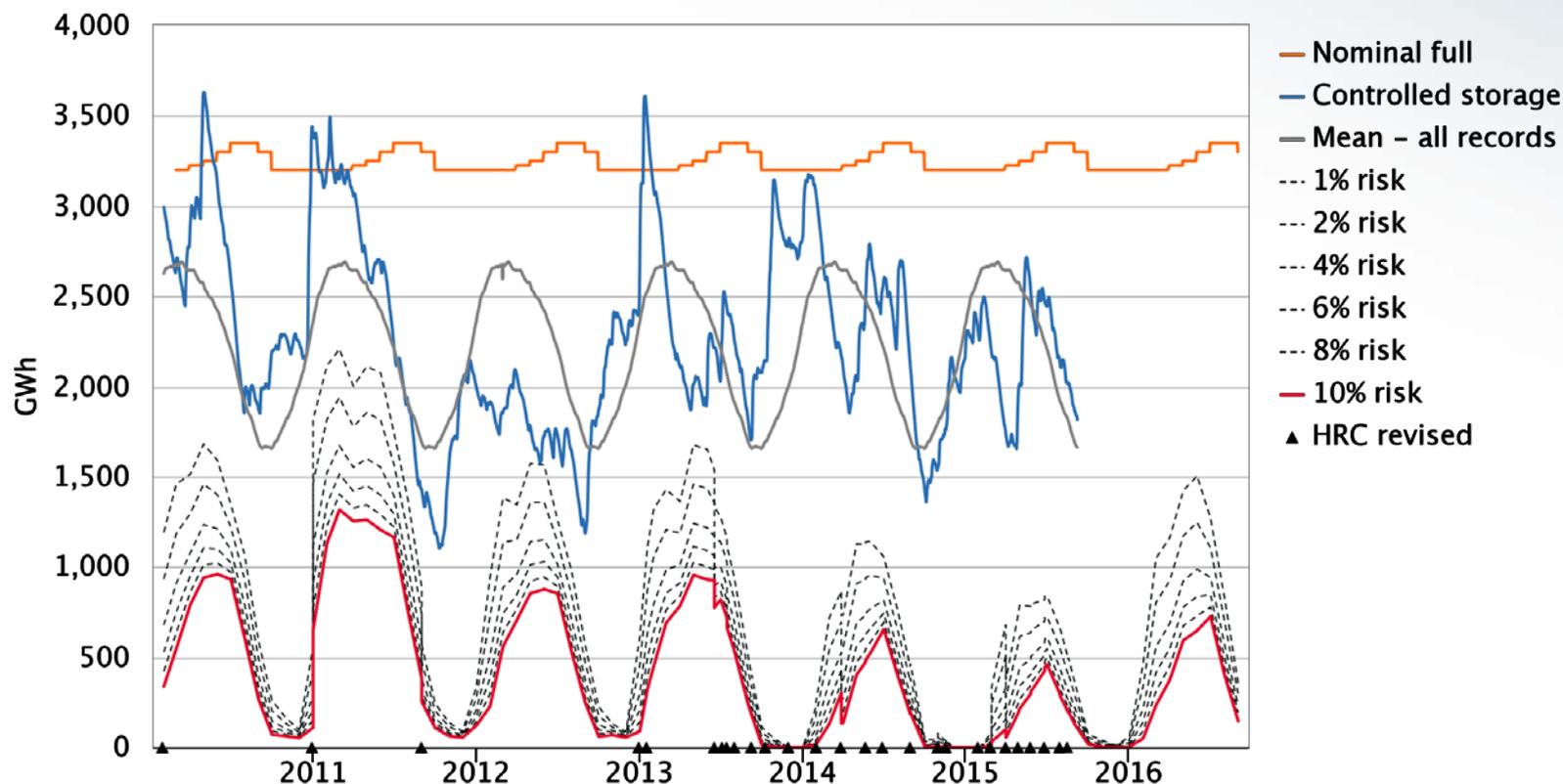
- Contact Energy
- Genesis Energy
- Todd Energy and King Country Energy
- Meridian Energy
- Mighty River Power
- Trust Power
- Pioneer Generation
- NIWA and selected Regional Councils

# Overview

1. What's changing in the HMD?
2. A closer look at components of the dataset
3. Getting on the same page and keeping up to date
4. Timeframes and what's next

# Impact of recent market announcements

Proposed thermal plant closures and the [SI hydro risk curves](#)



emi.ea.govt.nz/r/bvdfmj

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ELECTRICITY  
AUTHORITY  
TE MANA HIKO

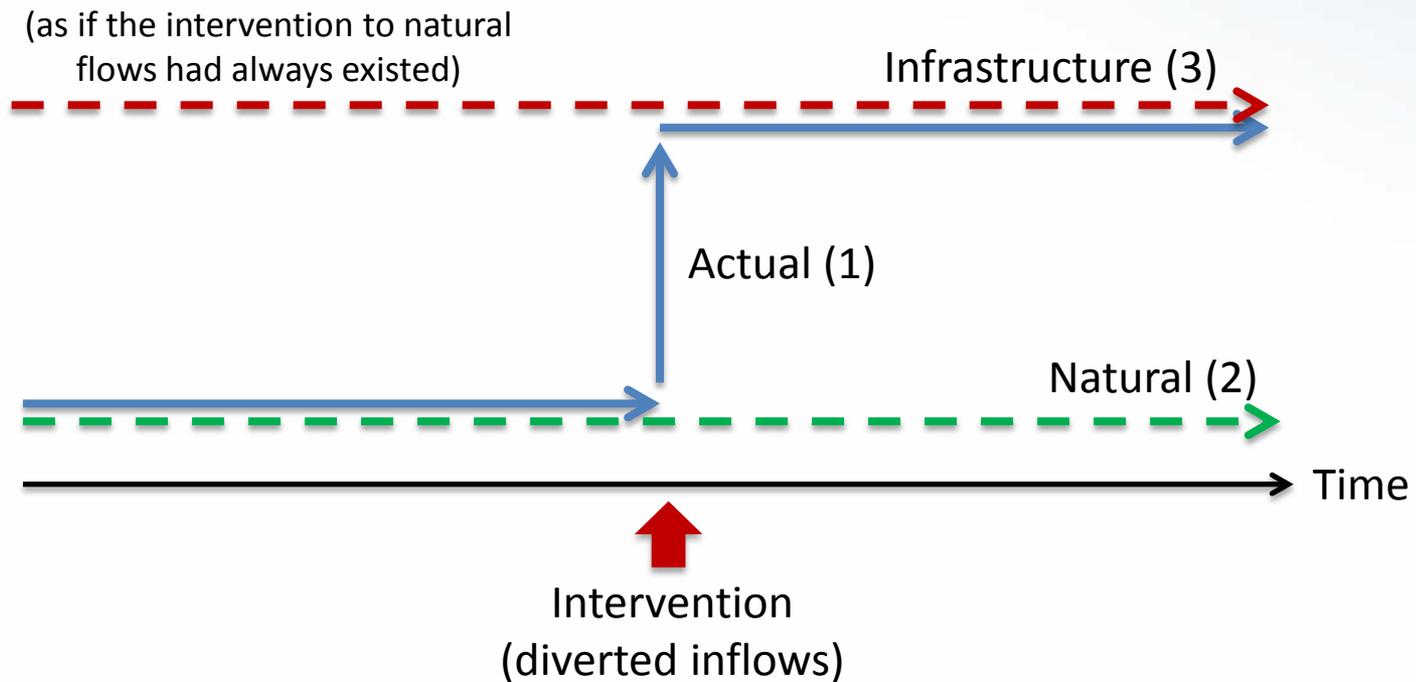
# What's changing?

The 2015 HMD update will:

- revamp the dataset formally known as the Spectra update
- change to calendar year to facilitate analysis of the latest winter
- increase alignment with the wholesale market (site codes)
- include an attribute to indicate synthetic data in the inflow series
- record infrastructure attributes and hydrological constraints as a dataset and when they change
- record contingent storage availability and when it is triggered
- embed process to keep infrastructure attributes up-to-date
- simplify reporting to improve efficiency of production
- look to introduce an annual interim update

# HMD - Inflows

## Actual, natural, and with the current infrastructure



# HMD - Infrastructure and hydro constraints

## 1. Infrastructure attributes

- Plant factors (cumecs/MW)
- Specific energy (m<sup>3</sup>/kWh)
- Max generation capacity

## 2. Hydrological constraints

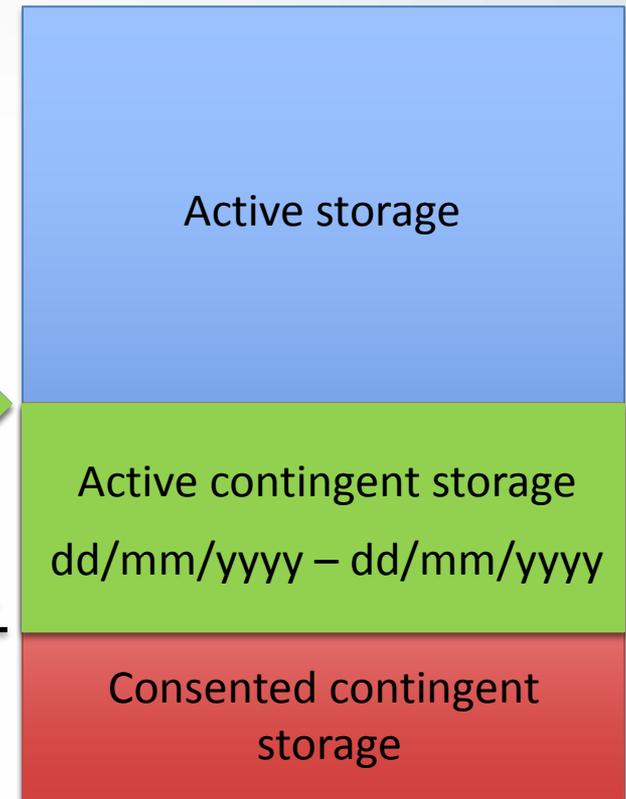
- Storage volumes
- Flow constraints
- Seasonal/periodic changes

Incorporates system configuration information with ranking of reservoirs, plants, canals

(Trigger)



## Storage types



# HMD – Historical storage data

This component of the HMD allows comparison of modelling results against historical operation. We include actual storage from 1980 onwards for 10 largest reservoirs.

The HMD will be accompanied by three reports:

1. Description and methodology
2. A comparison of inflows against the 2010 spectra update
3. A description of various hydro schemes and monitoring sites

# The role of hydro information

## 1. Hydro information informs:

- operational and investment decisions
- security of supply monitoring and forecasting
- market monitoring and supports the code development process

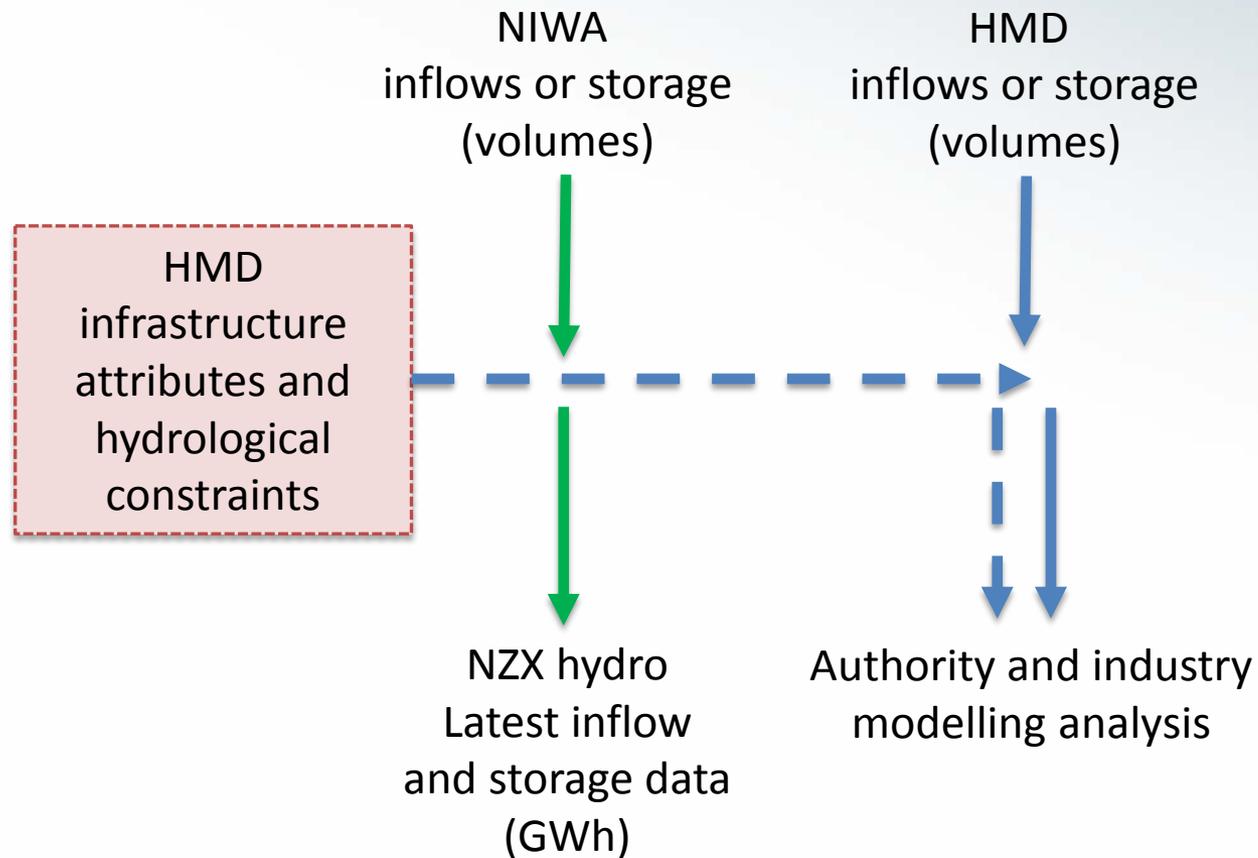
## 2. Impact of information in a shortage situation:

- triggers a public conservation campaign...
- and customer compensation scheme (\$10.50/ week)
- triggers access to large volumes of contingent storage
- assists clear communication to the public

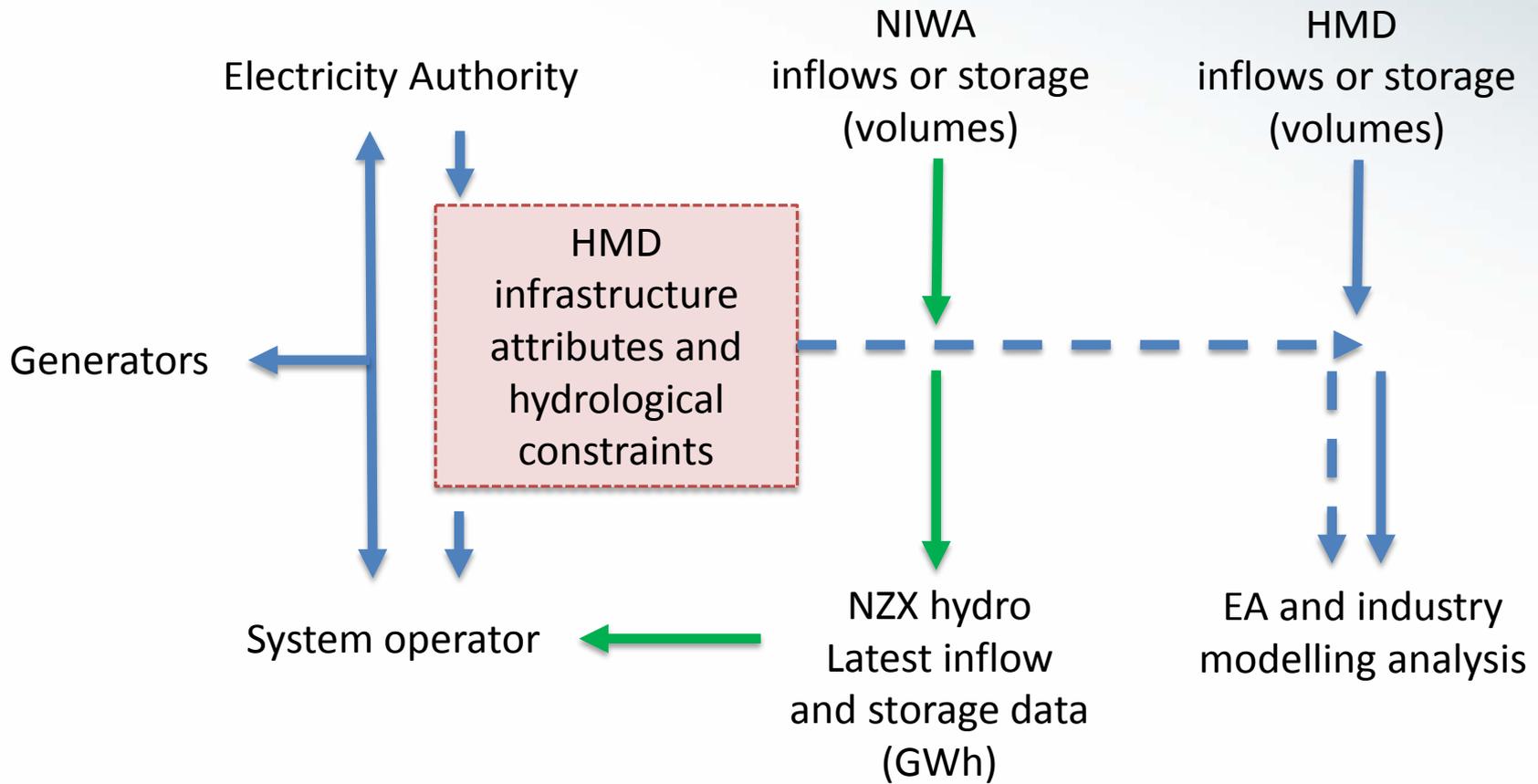


Alignment and accuracy of reporting avoids confusion and builds confidence

# Getting on the same page...



# Keeping up to date...



# Summary

The HMD update will:

- be released sometime in October 2015. We are interested in receiving any feedback you have regarding the new format
- update data to 31 December 2014 and capture material changes to hydro power assets
- improve alignment in reporting and modelling and embed process to maintain infrastructure attributes and hydrological constraints through time increasing quality of hydro analysis and confidence in reporting
- allow modellers to investigate a broad range of hydro related industry issues including changes to infrastructure and consent conditions