By the end of the first week of February, 2016, Tasmania's water-energy supplies had dwindled to just 18.26% of capacity. By the end of the second week, the 15 Feb 2016, that figure had fallen to 17.35%. By the end of the third week, it reached 16.8%. The state's two main water energy systems, the Great Lake and Gordon-Pedder Lakes are now below levels at which both environmental and water quality risks may have arisen. The Lake Gordon-Pedder system has dropped to 9.8% energy capacity. Our Great Lake system is reduced to 12.3%. This figure is below the low point reached during the Millennium drought, when the Great Lake fell to 16.7% of its capacity. Tasmania obtains its energy from domestic sources – Hydro (e.g. the Great Lake), Wind (e.g. Musselroe and Woolnorth), Gas turbine (e.g. Tamar Power Station) and Embedded generation (e.g. rooftop solar panels). A further source of energy is from the Loy Yang power station at Loy Yang, Victoria, which is transmitted via the Basslink cable. On December 20 of last year (2015) this cable developed a fault and ceased transmitting power to Tasmania. It remains[27 Feb 2016] out of service, and our Energy Minister, Matthew Groom, cannot tell us when it will be fixed.

What role does water play in Tasmania? We need water in our kitchens, bathrooms, toilets, gardens and cars. We drink it, cook with it, wash with it, flush toilets with it, brush our teeth with it, water our gardens with it, cool our cars with it, wash our cars with it. We fight fires with it and recreate on it and in it, on our beaches, in our rivers and creeks and swimming pools, on our water slides and from our diving boards. At MONA, we read the water for the news headlines with it, as it falls from a height, controlled by digitech. At golf courses, 'water hazards' are created with it and greens are kept green for those billiard-table finishes. We fish from it, race and row on it, use it for farming, for cropping and for grazing. We use it to create our electrical energy. In fact, we need it to sustain our economy and the environment of our state, both human and natural … and Hydro/Aurora Tasmania sell this generated electricity – from time to time – via an underwater cable linking George Town Tasmania to the Victorian Loy Yang (coal fired) power in Victoria. This is 'Basslink' [https://en.wikipedia.org/wiki/Basslink] From time to time, we also find it necessary to buy energy back from the Vics … at times such as now … when our water storages are low, when our Great Lake is down to some 12.3% full, or in 'glass half empty parlance' … 87.7% empty.

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**High and Dry: Great Lake between western 'shore' and Reynolds Island**

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Inside a Sunken Forest – They lie as they were felled.

Briefly, following Australia Day, the rains (and floods) came for a day or two. The lake rose some 30cm (hence the wet silt.) Then it retreated … the first one-week-upward, followed by two-weeks-down. (30cm is the length of the common wooden ruler.)

The level of the Great Lake when full is given as being 1039.37 metres above sea level. (e.g. see Hydro Tasmania's Great Lake Levels and Water Levels and Flows Map)

These data as of 15 Feb 2016 tell us that the Great Lake is now at 17.61 metres below the level at which it is full.

Therefore the level of the Great Lake, as of 15 Feb 2016, was (1039.37 – 17.65) … 1021.72 metres above sea level.

NOW: compare this to the table (at right) which is from page 56 of Hydro Tasmania's 2009 Annual Report.

See FULL REPORT (PDF) here.

THE WATER in our Great Lake has now entered the “High Risk” threshold, identified by Hydro’s 2009 Report which explained these risk thresholds (pg 61):

“water levels where environmental or social risks [i.e. pertaining to water quality] may arise, establish risk bands to address the risks, and initiate a monitoring and reporting program of key water quality variables before a lake enters its risk band” In my opinion, we need more action than this … why, in two weeks the Lake may well enter the extreme risk threshold, the rainfall prognosis is less than promising … we are in a predicament!
Now flora and fauna make an opportunistic, albeit tenuous, return to the G. Lake...

Celery Top(?) on the dry bed north shore, Reynolds Island

Macropod prints, on isthmus btn. Reynolds I. & 'shore'

Generating Capacity (in 2014) by type.

In 2014, according to TasNetworks, our domestic power generating capacity came from Hydro: 74%, Wind: 10%, Gas turbine: 12% and Embedded: 4%.
Thus total generating capacity would appear to be: 3077MW

Relative energy consumption supplied from the transmission network in 2014.
([Annual Planning Report 2015 pg 22]

Who used our power in 2014?

Major industrials 5402 54%
Distribution network 4157 42%
Other 383 4%

9942 GWh
Basslink:
a land and sea cable transmitting electricity and electronic data between
Tasmania and the mainland.

- The cable connects George Town (power station), northern Tas
  with
  Loy Yang (coal-fired power station) in Gippsland, Vic.

Basslink is owned by:
Keppel Infrastructure Trust, itself 'owned' by
CitySpring Infrastructure Trust (CIT), a Singapore based corporation, itself owned by
Temasek Holdings - a Singaporean Government investment company.
https://en.wikipedia.org/wiki/Basslink
and
“As at 31 March 2015, Temasek’s net portfolio value was S$266 billion, up S$43 billion from last year[26]”

Tasmania's is (https://en.wikipedia.org/wiki/Tasmania) in size some 68,401 square kilometres.

Basslink:
2000: Concept agreed to by Tas Govt.
2006: came online (built by National Grid Australia P/L … owned by UK's National Grid plc … National Grid plc.)
2007: 'acquired' by CIT.
2015: Basslink 'disconnected' due to fault, 20 Dec. … to be returned to service by March 2016
2016: definite 'return to service date' (19 March 2016) abandoned, now some mention of 'May'.
Only trouble is, Basslink is meant to be our energy back-up. “The Basslink Interconnector enhances security of supply on both sides of Bass Strait: protecting Tasmania against the risk of drought-constrained energy shortages while providing Victoria and southern states with secure renewable energy during times of peak demand.” [ Basslink website, http://www.basslink.com.au/ ]

When Basslink failed on 20Dec2015, we learnt [Helen Kempton, The Mercury 22Dec2015 http://tinyurl.com/h9zx9am ] that...

“...no power is being sent from Tasmania to Victorian customers and no power is being imported to save the water Hydro Tasmania has left in its dams” (on 20Dec2015 the Great Lake was at 18.18% capacity ... as of Monday22Feb2016 ... 64days after the Basslink failure, it had dropped to $\rightarrow 12.3\%$. of generating capacity.

[Energy in Storage (GWh)

<table>
<thead>
<tr>
<th>Head Water Storeages</th>
<th>Derwent</th>
<th>South Esk</th>
<th>Mersey Farth</th>
<th>Gordon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current GWh Energy in Storage</td>
<td>254</td>
<td>178</td>
<td>58</td>
<td>805</td>
</tr>
<tr>
<td>Current % of Full Storage Energy</td>
<td>31.6%</td>
<td>19.9%</td>
<td>51.9%</td>
<td>12.3%</td>
</tr>
<tr>
<td>Rise/Fall/Static over past 24 Hours</td>
<td>Falling</td>
<td>Falling</td>
<td>Falling</td>
<td>Falling</td>
</tr>
</tbody>
</table>

“...Basslink [was originally] working on a 60-day outage contingency, but the breakdown [had] given the State Government cause to rethink the planned sale of [...] the State's back-up gas-fired power plant in the Tamar Valley.” (can you believe it! 'Selling off the farm!')

Helen Kempton continued her Dec. article:

“ [...] Energy Minister Matt Groom said Hydro Tasmania was still in a position to meet all of Tasmania’s energy needs, but the breakdown also strengthened the government’s push for a second cable link to be built. Hydro Tasmania has been importing 40 per cent of the state’s energy demand from Victoria since October in the face of low dam storage levels and decided only last week that it would need to restart the Tamar Valley Power Station to meet demand. The station has been out of action for 18 months amid plans for its sale and was expected to fire back up in mid January.”

Interestingly, the Examiner's Calla Wahlquist had written a piece, published July 1, 2013: “Draw on lakes unsustainable” [ http://www.examiner.com.au/story/1609499/draw-on-lakes-unsustainable/ ] It must be pointed out that this was during Lara Giddings' Premiership (24 Jan 2011 - 31 Mar 2014). The minister responsible for water and energy at that time was Bryan Green.

It is worth revisiting that Examiner article:

The EXAMINER

**DRAW ON LAKES UNSUSTAINABLE**

July 1, 2013

**HYDRO** Tasmania is drawing water from Tasmania's highland lakes at an unsustainable rate in order to capitalise on the carbon tax windfall.

An analysis of the government-owned electricity company's storage data shows that the company has drawn down one-fifth of the storage capacity of its network in the past 12 months, leaving it at 32.8 per cent capacity. Energy analyst Stephen Weston said that if the company continued to draw on its resources at this rate for the next 12 months without a significant amount of rainfall the system could dip below 20 per cent capacity, which was considered a \"serious\" low when reached in 2007 and 2008.

\"It would appear to be unsustainable, without accounting for inflows,\" Mr Weston said. However, water storage levels are still higher than they were between 2007 and 2010.

Hydro Tasmania portfolio manager Gerard Flack said its water usage was not unsustainable. Mr Flack said the company was drawing on the long-term storage of Great Lake and Lake Gordon in order to maximise the profit from the carbon tax while it remains in place.
The tax was introduced on July 1 last year [2012] and could soon be scrapped, regardless of the federal election outcome, with Prime Minister Kevin Rudd last week announcing his intention to return to an Emissions Trading Scheme.

The carbon tax was expected to generate a record $245 million profit for Hydro Tasmania this financial year, but the actual profit is expected to be closer to $100 million.

Losing the carbon tax will wipe an estimated $175 million from expected state revenue.

Mr Flack said capitalising on the carbon tax windfall only involved the two long-term storage lakes and did not affect the rest of the network.

``Storages were deliberately built up in anticipation of the carbon price,” Mr Flack said.

Lake Gordon had fallen to 20.14 metres below full, 30 metres above its minimum operating level.

Great Lake is 16.14 metres below full, above its minimum operating level of 21.34, but Mr Flack said it was not expected to fall much lower.

Mr Flack said it would not be in Hydro's interests to over-stretch the system.

``Hydro Tasmania will continue to uphold its obligation to prudently manage water storages,” he said.

Comment: BRYAN GREEN & MATTHEW GROOM over-sold our water, despite 'unsustainability' warnings.

The Carbon tax was scrapped in July 2014. Since its inception in July 2012, it had brought 'favourable' energy prices Tasmania's way and Hydro Tasmania had sold off the water energy from the Gordon and Great Lake systems presumably to achieve maximum commercial benefit. And yet, personal memory tells me that it also brought unprecedented increases in the price of our household electricity. Bryan Green, the Minister, seems to have been ambivalent about the Carbon Tax, yet faced with its removal, called for Commonwealth compensation for Tasmania.

Yet, staying on track, under Bryan Green's watch, our two largest water storage systems were run down over a period of two years, from 2012-2014. Enter the Fates, stage (f)right, bearing a 'rather dry' 2015 and our Christmas present ... the breakdown of the Basslink interconnector and a gas power station in mothballs, then waiting to be sold.

However, we cannot remove our present Energy/Water/or whatever Minister from the frame. Matthew Groom did preside over the last months of the Carbon tax, and apparently in that period of 2014, the sell-off of the water-energy from the two lake systems reached a peak:

Senator David Bushby caned the Labor government for ‘recklessly’ draining dams “to cash in on the windfall gain”, but he didn’t disclose that the frantic selling in the final three months of carbon pricing were presided over by the Hodgman Liberal government.

[ Peter Boyer, Mercury 19 Jan 2016: http://tinyurl.com/gvnqlxw and esp. see his blogs on 'Southwind' at southwind.com.au ]

[Sept 2015: Annual Liberal Tas. State Council]:

“Climate change motion advocates 'adaptation', not carbon reduction”

"Hear no warming, see no warming"

You have to hand it to these Liberals. At its Annual State Council in September 2015, the party put its ostrich head firmly in the sand:
Yesterday the party passed a motion urging the Federal Government to focus on adaptation to climate change "should it occur", rather than reduce carbon emissions.

Some members described climate change as a "furphy".

In moving the motion, Dr John Reid told fellow members there was no evidence of climate change.

"The whole thing has become a huge international hysteria and we have all this stuff about alternative energy and so on as if we're in some sort of desperate situation where we cannot go on using fossil fuel. This is not true," he said.

"What it really is, is green propaganda but it seems to have caught on with everyone, it feeds into people's preconceptions of capitalist greed and about humans wrecking the planet, but there is no scientific basis for it..."

“Ostrich” by A. Seigel; “Denial” by Zert Sonstige 2008 or Larcinni 2000; from Creative Commons images on Flickr.

However, even if Basslink provided a sustainable, 'environmentally friendly' energy source (which it doesn't – the Loy Yang power station runs on coal), we'd at this moment be up the creek without much of a paddle, and on a pretty dry creek bed. The Basslink cable ceased to operate on Sunday 20th December, 2015 [http://www.themercury.com.au/news/tasmania/fault-found-in-basslink-cable-100km-offshore/news-story/3874e0516c2745dca4bce4808bde4a] It came just at the right moment ... from one perspective. You see, the conservative, climate-change deniers, a.k.a. the Tasmanian Liberals, were trying to sell off our Tamar power station [see Smurf's #9 at http://www.tasmaniantimes.com/index.php/article/the-bell-bay-giveaway for an account (2008) of the Bell Bay to Tamar Power Station transition; and http://www.abc.net.au/news/2015-09-06/liberal-party-members-urged-to-back-online-sharing-services/6753048 for the 2015 Liberal Party's rejection of the fact of climate change. ]

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The First Bass Link?
(after the glaciers thawed, but before the climate dinosaurs returned)

Our water storages levels, on which our state depends environmentally, economically and socially, have reached low levels, reminiscent of – but lower than – those experienced during the Millenium Drought. [ see: "Bureau says Tassie drought worsening", Australian Broadcasting Corporation, 10 October 2008; https://en.wikipedia.org/wiki/Drought_in_Australia ]

During the working week 22-26Feb, I heard a chap from Hydro being interviewed by Leon Compton, on the ABC Mornings show. He spoke for a fair while, and I remember him saying that Hydro had made $200m in each of the two years of the Carbon Tax sell-off of our water storages. He also made the point – and I'm yet to check it out – that the water-energy that was sold off had been extra water that Hydro had built up in the years before the Carbon Tax was introduced. In short, he said that Hydro had built up its storages knowing that the Carbon Tax was coming.

Our water: the last 10 years, the Carbon Tax time in red
(I checked out the Hydro Man's claim about saving extra water for the Carbon tax sell-off) ...in my opinion, it's a spurious claim ... it ran last in the Launceston Cup 2016.

<table>
<thead>
<tr>
<th>Head Water Storages</th>
<th>South Esk / Gordon System</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lake Augusta</td>
</tr>
<tr>
<td>%Great Lake</td>
<td>6567 (Full)</td>
</tr>
<tr>
<td>Monday 22-Feb-10</td>
<td>31.9% full</td>
</tr>
<tr>
<td>Monday 28-Jun-10</td>
<td>29.5% full</td>
</tr>
<tr>
<td>Monday 23-Aug-10</td>
<td>31.5% full</td>
</tr>
<tr>
<td>Monday 30-Aug-10</td>
<td>31.9% full</td>
</tr>
<tr>
<td>Monday 28-Feb-11</td>
<td>32.2% full</td>
</tr>
<tr>
<td>Monday 29-Aug-11</td>
<td>45.1% full</td>
</tr>
<tr>
<td>Monday 27-Feb-12</td>
<td>42.4% full</td>
</tr>
<tr>
<td>Monday 25-Jun-12</td>
<td>39.6% full</td>
</tr>
<tr>
<td>Monday 27-Aug-12</td>
<td>39.7% full</td>
</tr>
<tr>
<td>Monday 25-Feb-13</td>
<td>24.5% full</td>
</tr>
<tr>
<td>Monday 26-Aug-13</td>
<td>27.3% full</td>
</tr>
<tr>
<td>Monday 24-Feb-14</td>
<td>25.9% full</td>
</tr>
<tr>
<td>Monday 30-Jun-14</td>
<td>21.0% full</td>
</tr>
<tr>
<td>Monday 29-Sep-14</td>
<td>24.6% full</td>
</tr>
<tr>
<td>Monday 23-Feb-15</td>
<td>22.4% full</td>
</tr>
<tr>
<td>Monday 31-Aug-15</td>
<td>25.2% full</td>
</tr>
<tr>
<td>Monday 22-Feb-16</td>
<td>12.2% full</td>
</tr>
</tbody>
</table>

REFLECTIONS:
- those figures in bold formatting, are Energy in Storage (GWh) units: not the exact volume of water in the storages – thus the %Great Lake column (which give my calculations from the Hydro's original Energy Storage - Historical Data) shows measures of stored (water) energy. Hydro – in my opinion – had not 'built up our storages' in anticipation of the Carbon Tax. In my opinion, one can't claim that 39.6% energy storage level is a 'built-up in anticipation' figure.

- those entries in red show the Great Lake's energy storage levels during the time of the Carbon Tax. I note that the 'energy' level of the Great Lake before the Carbon Tax drawdown was 39.7%. True, the rest of the system was in better shape, but by 30 June 2014, our total storage system held 28.0% of its generating capacity. As you can see, the Great Lake was at 21.0% of its generating capacity and the Gordon system was at 22.1%. IMO, that's 'criminal'.

- most recent figures at time of publication:
  Great Lake: 12.2%
  Gordon-Pedder: 9.7%
  Total Storages: 16.7%

- What is not prominently published on the Hydro's website is that the Arthur's lake storage (traditionally used as a 'top-up' for the Great Lake, is now used for the Midlands Irrigation Scheme.

See: Tasmanian Midland Irrigation system watering crops and ...

Aug 14, 2014 - The $100 million Midlands Irrigation Scheme is watering farm crops ... He says the majority of the power will be used to pay the costs of moving water to farms. "Use the control panel, open up the valve at Arthur's Lakes, let the ...

Let it also be noted that some 'Lakers' believe that Great Lake water has been pumped into Arthurs Lake for further pumping into the Midlands irrigation scheme.

- It seems, in my opinion, fair to state that Hydro Tasmania have mismanaged our water resources. This is a near disastrous state of affairs.
- It seems fair to say that neither Bryan Green nor Matthew Groom have managed our water resources efficiently.
- It seems fair to say that the emergency planning measures now introduced by Hydro are 'too little, too late'. [See the latest Energy Supply Plan: operational update]
The Dustbowl: Great Lake - Northern Tasmania, February 2016, 87.7% empty. 'Where is the evidence' ask the Liberals.

'There once was 18 metres of water over this.'
Great Lake – north western perspective.

Water Management Act 1999
49. Hydro-electric generation
Subject to this Act, a person who has lawful access to a watercourse or lake may use water from the watercourse or lake for the purpose of generating electricity if the use does not –
(a) cause material environmental harm or serious environmental harm or significant detrimental effects to other users; and
(b) contravene any other Act.

COMMENT:
You could drive a bus through that law, couldn't you! So too could you drive a (tough) bus across this part of our Great Lake.

When June was half gone, the big clouds moved up out of Texas and the Gulf, high heavy clouds, rainheads. The men in the fields looked up at the clouds and sniffed at them and held wet fingers up to sense the wind. And the horses were nervous while the clouds were up. The rainheads dropped a little spattering and hurried on to some other country. Behind them the sky was pale again and the sun flared. In the dust there were drop craters where the rain had fallen, and there were clean splashes on the corn, and that was all.
The dawn came, but no day. In the gray sky a red sun appeared, a dim red circle that gave a little light, like dusk; and as that day advanced, the dusk slipped back toward darkness, and the wind cried and whimpered over the fallen corn. Men and women huddled in their houses, and they tied handkerchiefs over their noses when they went out, and wore goggles to protect their eyes. When the night came again it was black night, for the stars could not pierce the dust to get down, and the window lights could not even spread beyond their own yards. Now the dust was evenly mixed with the air, an emulsion of dust and air. Houses were shut tight, and cloth wedged around doors and windows, but the dust came in so thinly that it could not be seen in the air, and it settled like pollen on the chairs and tables, on the dishes. The people brushed it from their shoulders. Little lines of dust lay at the door sills... (The 'Dustbowl')

Steinbeck - The Grapes of Wrath

It's spreading quicker now, eh? About time we all started 'voting Green' and 'being the change' we need - Garry Stannus.