Belubula Drought Operations 2019-20

Belubula Landholders Association Meeting
21 January 2020
Carcoar Drought Inflows for 44 Months Starting in November

Cumulative Inflows in GL

No of Months

Nov 1900 - Jun 1904
Nov 1943 - Jun 1947
Nov 1979 - Jun 1983
Nov 2001 - Jun 2005
Nov 2016 - Dec 2019 (38m)
Determine what % of remaining GS balances is deliverable – from 1 October in 2019-20

- Only an indicative calculation – discussed at 12 Sept 2019 meeting

• GS Balance = 6679 ML (7254 – 575 = 6679 ML)
• HS Balance = 717 ML (AWD 100%)
• S&D Balance = 220 ML (AWD 100%)
• Total = 7616 ML

• Dam holding = 7600 ML
• Dam Inflow = 100 ML (min. inflow stats Oct – June)
• Useful Tribs = 3500 ML
• Less end of June 2020 target dam level = 2500 ML
• Less Transmission Losses = 4000 ML
• Less Operational Surpluses = 500 ML
• Less Dam net evaporation = 500 ML
• Net resources available for use = 3700 ML
• Net resources available for use by GS = 2763 ML

• So, approx. 2763 ML out of 6679 ML of GS remaining alloc is deliverable ie 41% of GS balance
Water delivery decisions for 2019-20 to date

• 1 July 2019
  • Access to GS allocations remaining in accounts as of 1 July 2019 was permitted unconstrained until end of September 2019. Dam releases are not planned until 1 Oct 2019.
  • AWD for HS and S&D was announced as 100% on 1 July 2019.
  • Unrestricted delivery of account water in Carcoar to Needles for all licences.
  • Delivery of account water only with trib. Flows below Needles
  • Uncontrolled flow access as per WSP.
  • Supplementary access as per WSP.
  • No restrictions to trade.
• 1 October 2019
  • 40% of GS take-account as of 30 Sept was available for use.
  • Unrestricted delivery of accessible account water to all sections.
  • Water delivery in pulses.
  • Further restrictions to access may be required next calendar year if conditions continue to deteriorate.
<table>
<thead>
<tr>
<th>Block Release pattern</th>
<th>Dates</th>
<th>Released from Dam (ML)</th>
<th>Ordered (ML)</th>
<th>Est Losses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekly</td>
<td>6/10/19 – 9/10/19</td>
<td>156</td>
<td>633</td>
<td>~173</td>
</tr>
<tr>
<td></td>
<td>16/10/19-20/10/19</td>
<td>298</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>28/10/19-31/10/19</td>
<td>179</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly</td>
<td>27/11/19 - 4/11/19</td>
<td>591</td>
<td>~162</td>
<td>429</td>
</tr>
<tr>
<td>Monthly</td>
<td>23/12/19-31/12/19</td>
<td>867</td>
<td>~217</td>
<td>650</td>
</tr>
</tbody>
</table>

- Note: What was ordered may not be fully taken.
## Water Account Balance – 16 January 2020

<table>
<thead>
<tr>
<th></th>
<th>Sum of Share Component</th>
<th>Sum of Account Balance</th>
<th>Sum of Available Water</th>
<th>Sum of AWD Vol</th>
<th>Sum of Carryover In</th>
<th>Sum of Allocation Assignments In</th>
<th>Sum of Allocation Assignments Out</th>
<th>Sum of Usage</th>
<th>Sum of UCF Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOMESTIC AND STOCK</strong></td>
<td>170</td>
<td>169</td>
<td>164</td>
<td>170</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
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<tr>
<td><strong>DOMESTIC AND STOCK [DOMESTIC]</strong></td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>DOMESTIC AND STOCK [STOCK]</strong></td>
<td>44</td>
<td>41</td>
<td>41</td>
<td>44</td>
<td>-2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>REGULATED RIVER (GENERAL SECURITY)</strong></td>
<td>22,454</td>
<td>6,920</td>
<td>2,243</td>
<td>0</td>
<td>8,221</td>
<td>1,279</td>
<td>799</td>
<td>1,813</td>
<td>32</td>
</tr>
<tr>
<td><strong>REGULATED RIVER (HIGH SECURITY)</strong></td>
<td>1,095</td>
<td>460</td>
<td>394</td>
<td>1,095</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>480</td>
<td>155</td>
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<tr>
<td><strong>SUPPLEMENTARY WATER</strong></td>
<td>3,125</td>
<td>3,065</td>
<td>3,065</td>
<td>3,125</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>60</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>26,894</td>
<td>10,661</td>
<td>5,913</td>
<td>4,440</td>
<td>8,219</td>
<td>1,279</td>
<td>1,279</td>
<td>2,030</td>
<td>92</td>
</tr>
</tbody>
</table>

**Note:** 702 ML of GS use is for irrigation
Water Delivery – Current

As at 19 Jan 20

- Storage Volume : 4810 ML
- Storage Percentage : 12.8%
- Current Release : 10 ML/d
- Total Release since 1 July 2019 : 3100 ML
- Est Total dam inflows : 315 ML
- Est Total trib. inflows : 1454 ML
- Est useful trib. inflows : 1397 ML
- Est dam net evaporation : 242 ML
- Initial Water Delivery Strategy: Weekly Pulsing – Outcome: d/s demand not met
- Current Strategy : Monthly Pulsing – Outcome: 80% d/s demand met – Require ~900 ML to meet ~200 ML demand
- Future Strategy : Need discussion
Determine what volume would be left in Carcoar on 30 June 2020

-Only an indicative calculation

- Dam holding (20 Jan 2020) = 4810 ML
- Dam Inflow = 100 ML (min. inflow stats Feb – June)
- Useful Tribs = 1400 ML (est useful tribs Feb to June)
- Less use (Jan pulse 250, Feb 250, Mar 200) = 700 ML
- Less Transmission Losses for monthly pulses = 1950 ML
- Less Transmission Losses, Dam - Needles = 230 ML
- Less BLR = 260 ML
- Less Operational Surpluses = 0 ML
- Less Dam net evaporation = 250 ML
- **Carcoar Dam volume on 30 June 2020** = 2920 ML

- Risks:
  - Actual useful trib. Inflows lower than estimated
  - Actual transmission losses are higher
End of Presentation