One Norwegian Example of Environmental Friendly and Efficient use of Hydro Power.

Lysebotn II
The Lysefjorden Area

- Jøssang&Dalen: Approx. 115 GWh
- Flørli: Approx. 250 GWh
- Tjodan: Approx. 320 GWh
- Lysebotn I: Approx. 1320 GWh
- Breiava: Approx. 55 GWh
Lysebotn I – Pioner Work

- Played a very important role in the rebuilding of the Rogaland County the two first decades after the second world war.

- 210 MW – 6 horizontal Pelton
- Gross Head 630 meter
- 1320 GWh/year
- Start Operation 1953-1964
- Catchment Area 316 km²
- Reservoir Percent 70 %
Main Achievements of the New Electrical Power Plant.

- Increased use of already regulated water => higher efficiency
- Total contribution of approximately 180 GWh renewable hydro power entitled to green certificates
- Increased production to the cost of $0.5/kWh (Marked value about $1/kWh)
- Expected annual average production approximately 1500 GWh.
- Increased effect from 210 MW till 370 MW => expected hours of operation reduced from +6000 hours today to +4000 hours. => more power may be produced when prices are high.
Good Environmental Project

- No new waters or rivers are affected
- Very limited environmental Effects
- No need to apply for new concession
Lysebotn II Power Plant

- Increased yearly production from 1320 GWh til 1500 GWh. Today's production is done by 6 Pelton turbines. 3*30 MW + 3*40 MW. Total effect: 210 MW.

- Lysebotn II: 2 identical high-pressure Francis turbines, each with the effect of 185 MW. Total effect: 370 MW.

- Planned production start-up in the spring of 2018.
Some Details

Existing watersystem
Lysebotn II - Entrance
Lysebotn II - New watersystem
Lysebotn II Hydro Power Station – Schematick
Questions?

Thank You for Your Attention!