

# HYDROPOWER – A Sustainable Source of Electricity Generation

## Global Warming & Hydropower

- Global warming is the world's most important and pressing environmental issue of the twenty first century.
- Sustainable hydropower development can help reduce global warming.
- Canada is the world's biggest producer of hydropower.
- Structured guidelines and procedures are now available to the hydropower industry to ensure its sustainable development and operation.

## What should be done NOW ?

- Reduce substantially CO<sub>2</sub> emissions.
- Use less energy.
- Switch to renewable energy sources.
- Grow more forests.
- Apply widely sustainable development concepts.
- Train the public.
- Provide people with incentives to contribute at the individual level.
- Invest in scientific research.
- Reach an international agreement on Global Warming

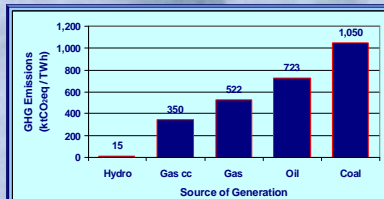
## Advantages of Hydropower

- Renewable source of electricity.
- Helps fight climate change. Emits 60 times less GHG than coal fired plants.
- Supports intermittent renewables: wind, solar.
- It's clean, doesn't pollute the air.
- Hydro reservoirs are beneficial to water supply, irrigation, flood control and recreational uses.
- Provides electricity price stability since it's not subject to fuel price volatility and is inflation-proof.
- Provides operating flexibility with quick starts and stops.
- Helps following the load via AGC.

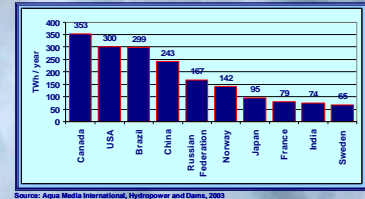
## More Hydropower Advantages

- Established and reliable technology.
- Great return on initial investment.
- Contributes to the on-going security of the electricity generating systems.
- Vital in restoring the electricity systems in case of blackouts.
- Highly efficient. Converts 90% of available energy into electricity.
- Enhances the local economy and quality of life.
- Long life cycle, from 50 to over 100 years.
- Very low maintenance costs.
- Significant public support.

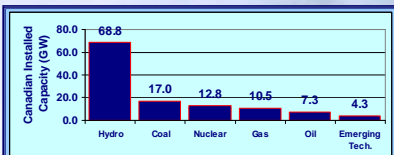
## Typical GHG Emissions



## Top 10 Producers of Hydropower



## Canadian Installed Power Capacity



## Improvements needed in Canada

- Political recognition that hydropower is a major tool in the fight to reduce greenhouse gas emissions.
- Streamline the environmental approval process for hydropower projects.
- Ensure consistent application of the environmental assessment process including impacts caused by global warming, acid rain, smog and public health factors for all electricity generation projects.

## Conclusions

- Canada has large undeveloped hydropower resources.
- Development of these resources can contribute greatly to reducing GHG and to the economic development of the country.
- Federal and provincial governments should consider introducing policies for a fast-track sustainable development of these clean and renewable resources.