

Breakout: Water Resources and Sustainable Systems:

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Participants:

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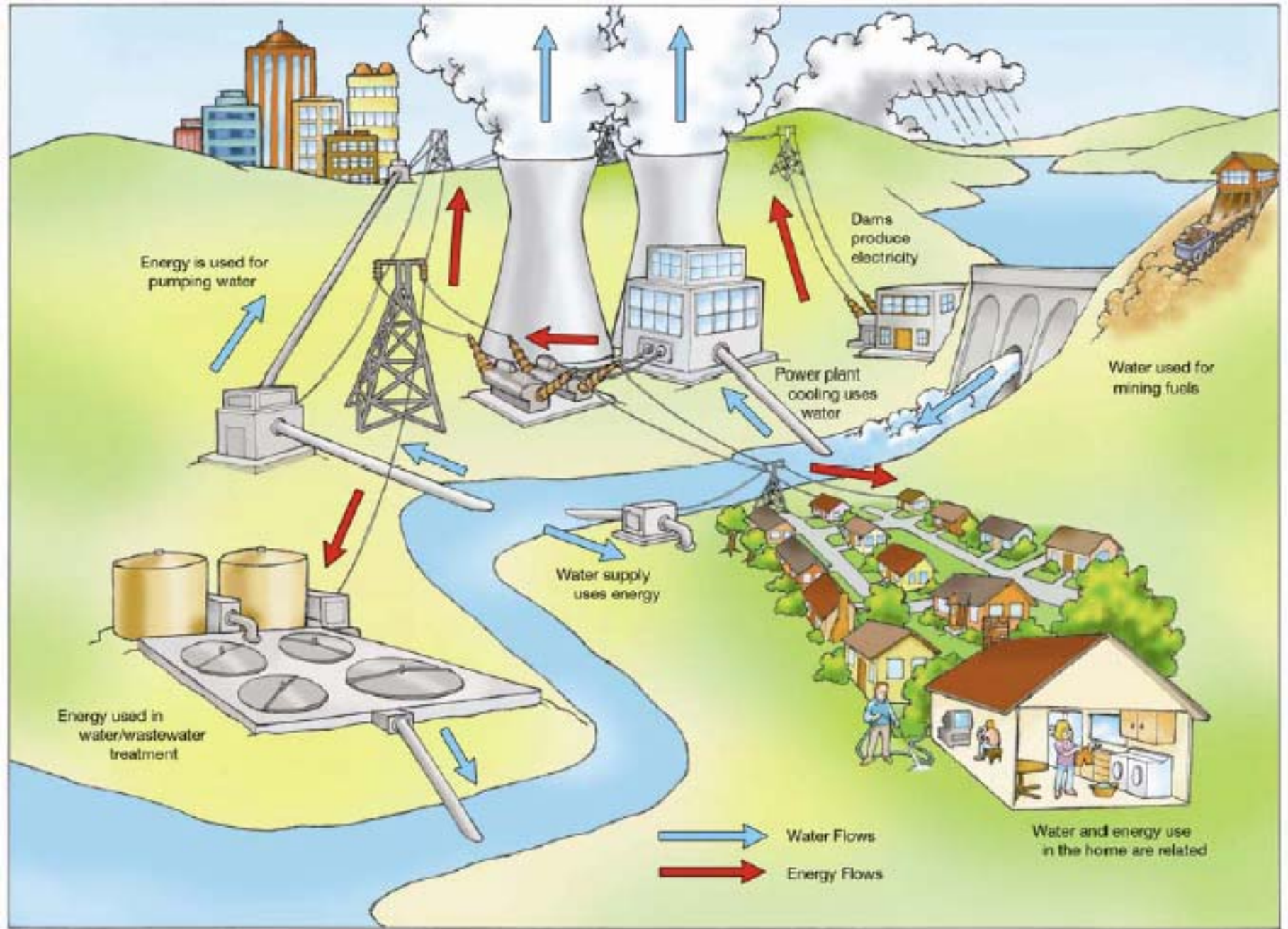
Tom Yeager (Kennedy Jenks)

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Charlie Buescher, Ray Ehrhard (WUStL)

How is water and energy linked?

Energy demands on water resources, DOE report to congress



Energy and water and its interconnection

- Distribution (pumping)
- Treatment (membranes - maybe not a concern)
- If you want to save energy, save electricity, not via water
- Biofuels: how much water is needed?
- Water for energy storage

Site specific: no optimal solution

Water usage

Energy efficiency

Costs

Unique features:

Source of water

Treatment method

Existing infrastructure

Degree of reuse

Policy and politics

Examples:

Hong Kong: seawater to flush toilets and cooling

Wastewater treatment was not affected, but corrosion was a problem

Mexico City: wastewater for irrigating crops -> recharge water contamination (groundwater) - > drinking water (safety concern)

Various cities around the world: drinking water is safe, but nobody trusts it to drink (bottled water)

Important areas for further discussions (all are connected):

1. Membrane technologies (salt water, brackish water, and reclaimed water)
2. Distribution systems (energy and safety)
3. Decentralized treatment
4. Energy recovery from wastewater (anaerobic digestion)

Other next steps:

Meet tomorrow to talk more specifically about 4 areas

Web page:

- Names of researchers and their areas of interest
- Areas of collaboration needs: looking for expertise in “Water and Energy”
- Education: linked to EEED.wustl.edu - 176 courses already listed.