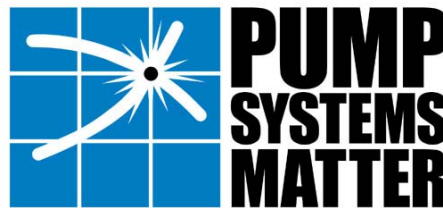


*Pump Systems Matter
Energy Summit*

Utility Industrial Efficiency Programs Overview

Parminder Sandhu

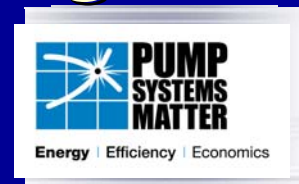
BC Hydro – Power Smart



Energy | Efficiency | Economics

Parminder Sandhu

- **Manager, Industrial Programs at BCH**
- **Program design and implementation experience with BCH, NSP, PGE, SCL.**
- **Founding Member, Industry Group within ASCEE with Canadian federal government**
- **Member, Electrical Energy Reduction in Mechanical Pulping and Processing, UBC**



Demand Side Management

- “ a deliberate effort to decrease, shift or increase electricity demand ”
- Load side of the revenue meter
- Impact to utility revenues

DSM Objectives

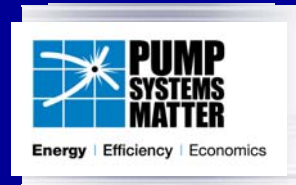
- **Overall efficiency**
 - Economic perspective
- **Economic, financial**
 - Lower utility investment requirements
 - Reduce risk of massive capital outlays
 - Reduce stranded asset risks
- **Environmental impact**
 - Generation and transmission

DSM Investment Criteria

- **Multiple perspectives**
 - **Society as a whole**
 - **Utility shareholder**
 - **Utility customer**
 - Program participant
 - Program non-participant

Cost-Effectiveness Tests

	UTILITY	RIM	Participant	TRC
BENEFITS			Bill savings + Incentive	
			Avoided Appliance Costs	Avoided Appliance Costs
	Avoided Generation & Capital Costs	Avoided Generation & Capital Costs		Avoided Generation & Capital Costs
COSTS	Utility Program Costs	Utility Program Costs	Participant Costs	Participant Costs
	Incentives	Incentives		Utility Program Costs
		Revenue Loss		



DSM & Market Barriers

- **Availability**
- **Awareness**
- **Accessibility**
- **Affordability**
- **Acceptance**

- **Plus market failures and market imperfections**

Types of Programs

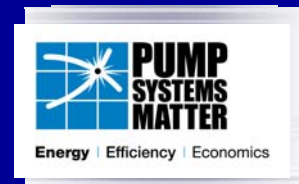
- **Electricity acquisition**
 - Acquire a specific amount of energy for specific period of time – like a generator
- **Market transformation**
 - Develop a permanent reduction in energy requirements – change the market
- **Hybird**

DSM Toolbox

- Incentives
- Rates
- Education
- Legislation
- Strategic partnerships
- People resources

Power Smart Partners

- Customized incentive based program
- Co-funding for energy studies
- Co-funding for an energy manager
- Target market > \$50,000 in electricity
- Primary markets: industrial, commercial, & institutional
- Residential program



Rate-based DSM

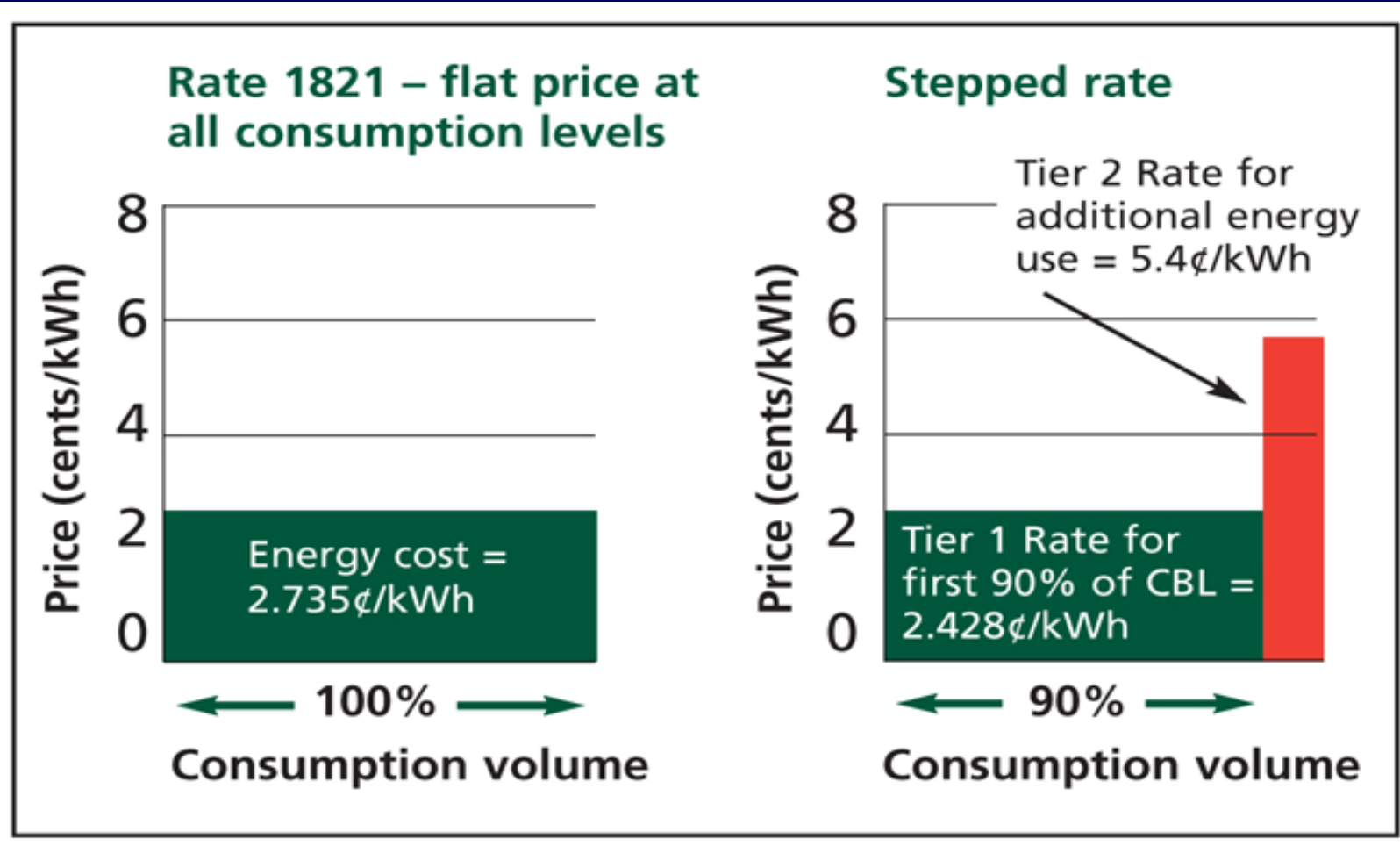
- **Tariff with the intent to encourage conservation and efficiency**
- **Targeted to our transmission customers**
- **No more capital incentives**
- **Portfolio of “enablers”**

Stepped rates

- **Stepped Rate (Inverted block pricing)**
- **TOU**
- **Retail access**

Pump Systems Matter

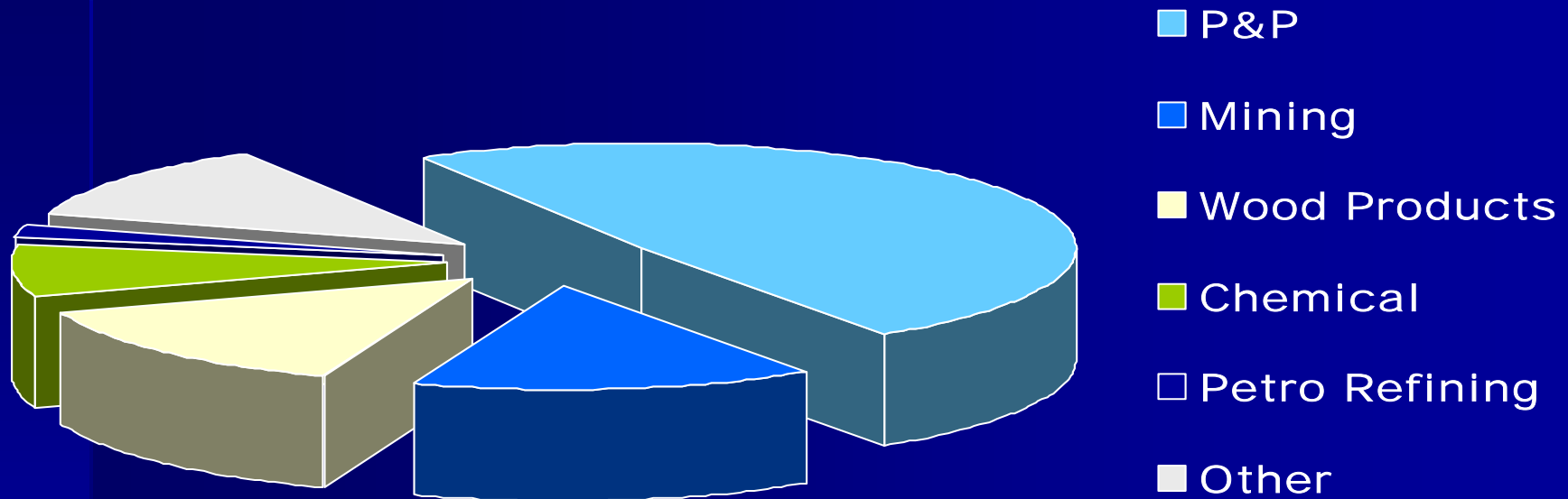
Energy Summit



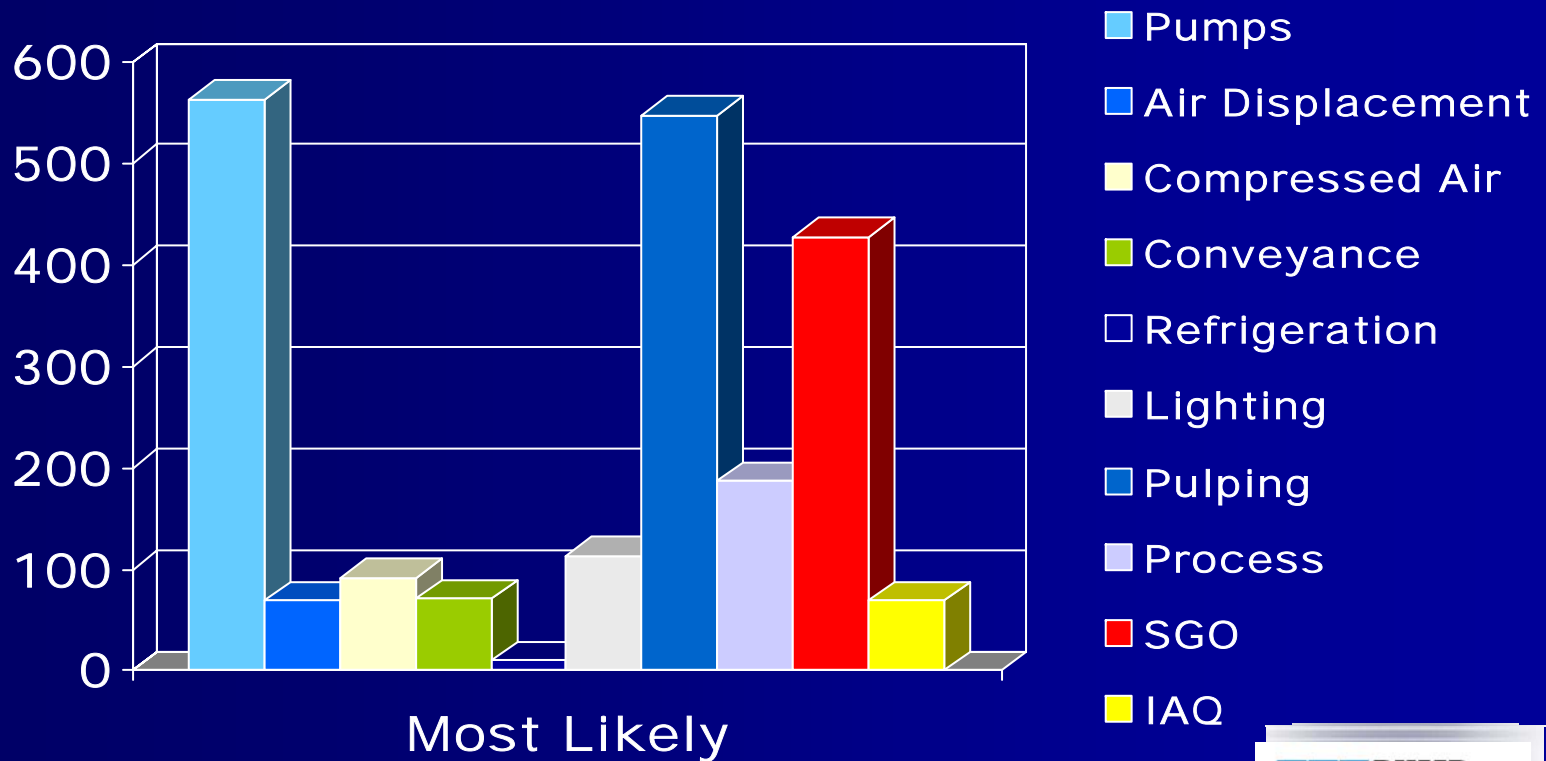
Program Overview

- Comprehensive energy management
- Continuous improvement model
 - People, process, technology/projects
- Leverage what customers already do well
- Integrate energy management into business practices
- Incremental improvements

BC Industrial Energy Use



BC Conservation Potential



Pump System Opportunities

- High-efficiency pumps
- Low-friction piping networks
- Efficient drive systems
- Pump system efficiency
- Improved control (including VFD's)

Call to action

- **Partnership to capture opportunities**
- **Systems approach – value add**
- **Life-cycle cost model**

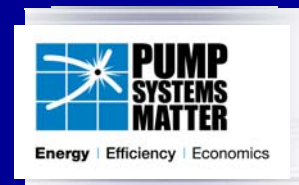
Thank You

- For more information contact....

Parminder Sandhu, P.Eng.

parminder.sandhu@bchydro.com

604-453-6414



Conferences

- Flowserve Energy Summit: Oct. 17, 2005 in Dallas
- ARC Advisory Group Forum: Feb. 20 -23, 2006 in Orlando (Rockwell Automation, ITT and PSM)
- PSM Energy Summit – Feb. 24, 2006 in Marco Island
- ACEEE National Market Transformation Symposium – March 19-21, 2006 in Washington, DC
 - PSM Speaking opportunity – pump workshop format
- Industrial Energy Technology Conference (IETC) – May 9 -12, 2006 in New Orleans
 - PSM White Paper, *“Taking Another Look at Pumping Systems: Opportunities Go Well Beyond Just Energy Savings”*

Sponsorship Benefits

- **Future Actions**
 - **Two sub committees will be formed**
 - One focused on End User benefits
 - One focused on Fund Raising

Sponsorship Fees

Current Fee Structure for HI Members

“Pump Systems Matter”™

Charter Partner Contribution Commitment Agreement
for Hydraulic Institute Members

Yes Our company will become a Charter Partner with a three year contribution commitment based on total company sales and service. Please indicate your revenue category and contribution level below.

	*CONTRIBUTION	REVENUE CATEGORY
<input type="checkbox"/>	\$1,500/Year	Under \$24.9 M/Year Revenue
<input type="checkbox"/>	\$2,500/Year	\$25M - \$49.9M/Year Revenue
<input type="checkbox"/>	\$3,500/Year	\$50M - \$99.9M/Year Revenue
<input type="checkbox"/>	\$5,000/Year	\$100M - \$199M/Year Revenue
<input type="checkbox"/>	\$7,500/Year	\$200M - \$299M/Year Revenue
<input type="checkbox"/>	\$10,000/Year	\$300M - \$499M/Year Revenue
<input type="checkbox"/>	\$15,000/Year	\$500M - \$749M/Year Revenue
<input type="checkbox"/>	\$20,000/Year	\$750M - \$999M/Year Revenue
<input type="checkbox"/>	\$25,000/Year	\$1B & Over/Year Revenue

*The undersigned hereby agrees to the annual contribution as indicated above for an initial three year period. *Contributions are based on each Charter Partner being a member of the Hydraulic Institute in good standing. Companies who are eligible to join HI who are Non-members may participate at higher contribution levels. Please request a separate form.*

Name _____

Title _____

Pump Systems Matter
Energy Summit

Thank You

