

Water pricing in Canada

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**Water Pricing for a Dry Future: Policy Ideas from Abroad and their
Relevance to California,
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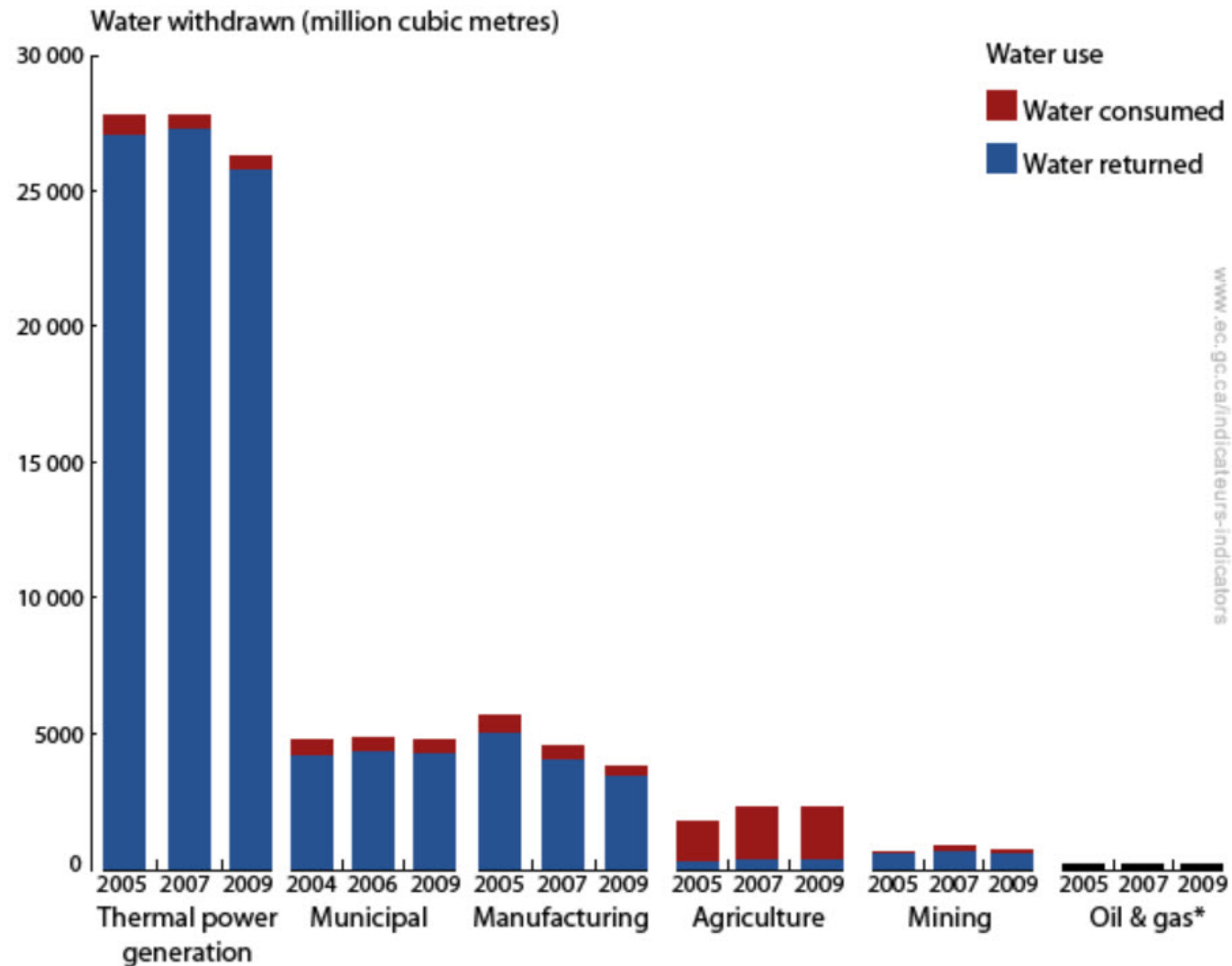


1. INTRODUCTION

- ▶ Review and critically assess sectoral water pricing experiences from Canada
 - ▶ Lessons learned for California
 - ▶ First, some stats on Canadian water use...
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Water Use in Canada

Water withdrawal by sector in Canada, 2004 to 2009



Water Use in Canada

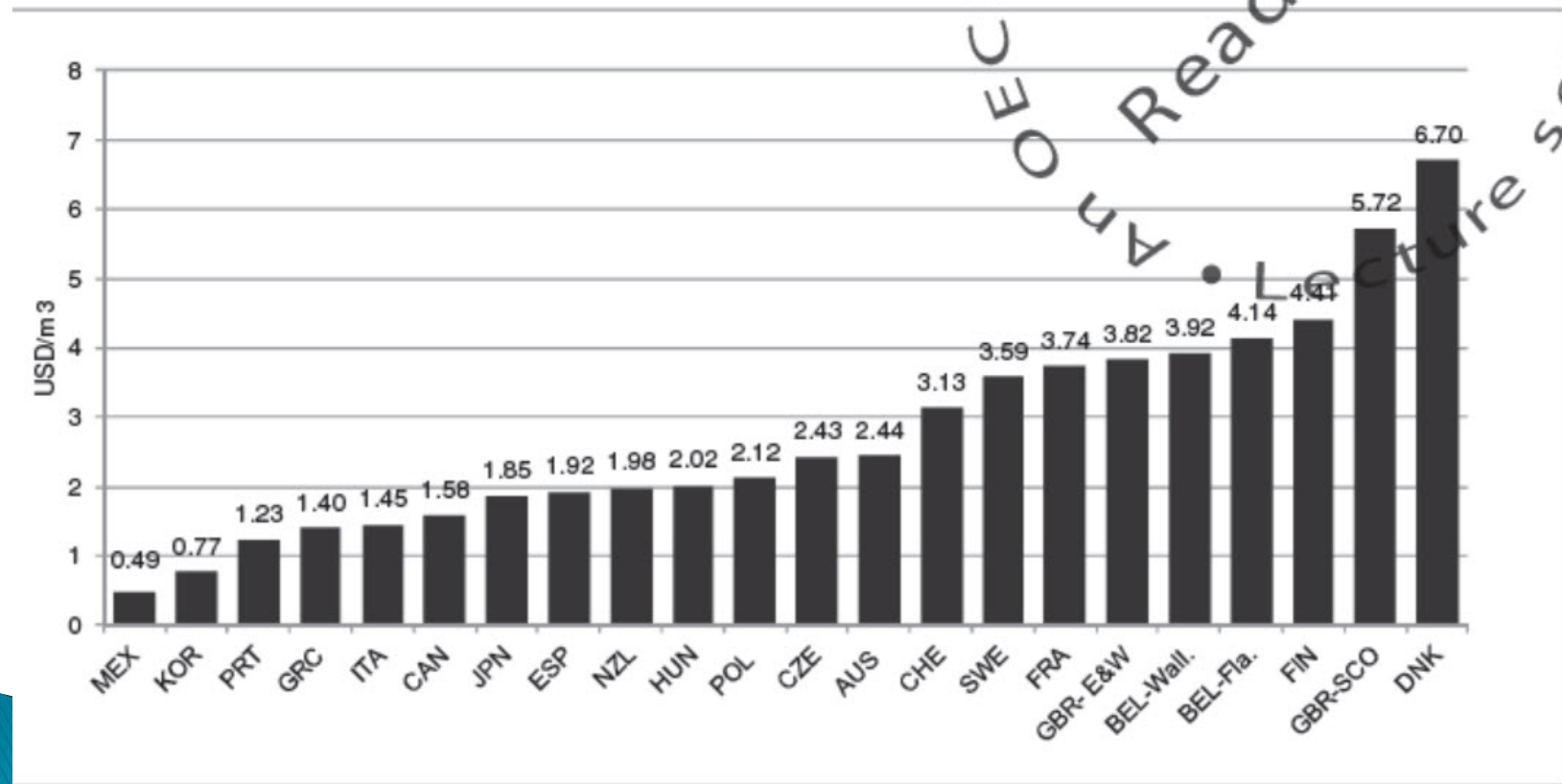
Table 1
Water use by industries and households¹

	2013	2013
	thousands of cubic metres	% of total
Total	37 910 769	100.0
Agriculture, forestry, fishing and hunting	2 007 460	5.3
Mining, quarrying, and oil and gas extraction	1 001 137	2.6
Utilities and construction	26 530 303	70.0
Manufacturing	3 953 976	10.4
Wholesale and retail trade	116 917	0.3
Transportation and warehousing	59 341	0.2
Other services and public administration	1 002 474	2.6
Households	3 239 162	8.5

Water Pricing in Canada

Figure 2.1. Unit price of water supply and sanitation services to households, including taxes, in OECD countries, 2008

USD per cubic metre

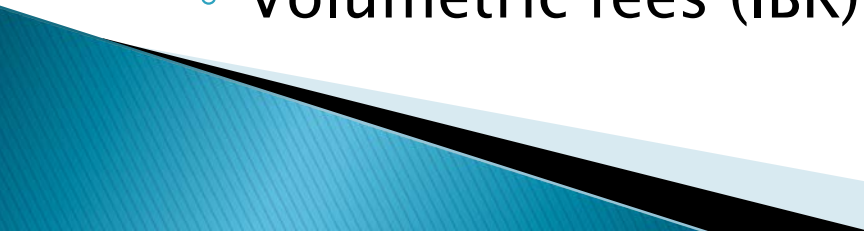


2. IRRIGATION

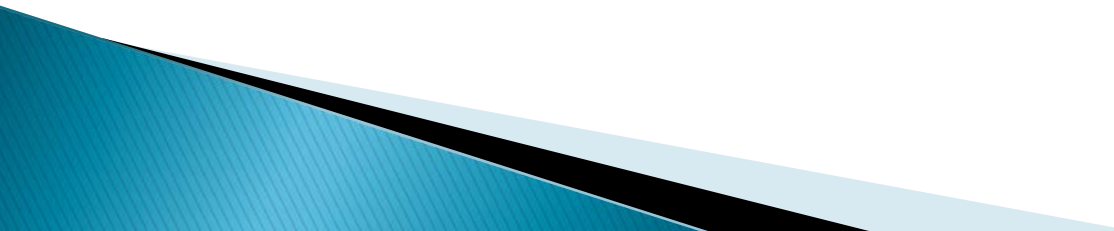


Irrigation – Current Practice

- ▶ Who is responsible?
- ▶ FITFIR in Western provinces (BC and AB) where most irrigation takes place
- ▶ But, Federal collects census data
 - First data in 2006

- ▶ FITFIR means water is “historically owned”
 - Irrigation Districts
 - Users pay “price” to user cover transport operations/infrastructure maintenance but NOT opportunity cost of water
 - ▶ Minimal number of users “own” licenses are are charged one time nominal license fee by Crown
 - ▶ District in BC installed water meters (recent)
 - “basic allocation” – historical
 - Volumetric fees (IBR), if over allocation
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Irrigation Water – Critical Assessment

- ▶ Water for irrigation has essentially a zero marginal price for most farmers
 - ▶ Low incentive to conserve
 - ▶ Low value crops (forage and field) are irrigated with inefficient methods (sprinkler)
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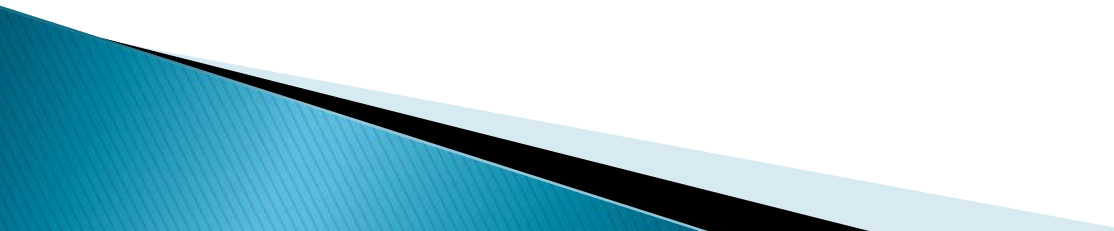
3. ECOLOGICAL G&S



Environmental – Current Practice

- ▶ Limited efforts to “price” environmental services
- ▶ Most efforts are “subsidies or tax credits or cost-sharing” to farmers to encourage better management practices
 - Not explicitly linked to provision of environmental services

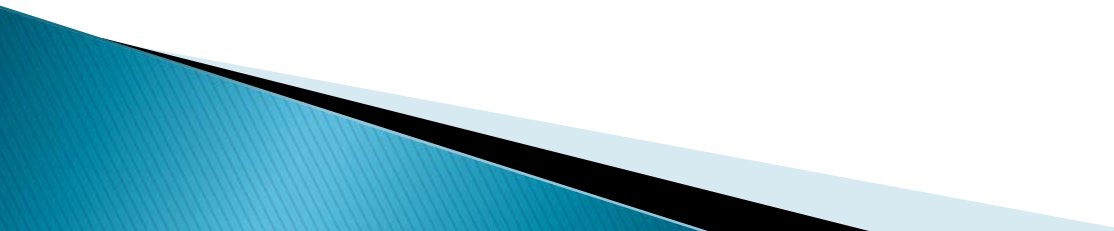
Environmental – Critical Assessment

- ▶ Mapping of groundwater sources incomplete
 - ▶ Absence of effort to price externalities associated with diminished water quality
 - ▶ Municipal water bills (in particular) do not include this component
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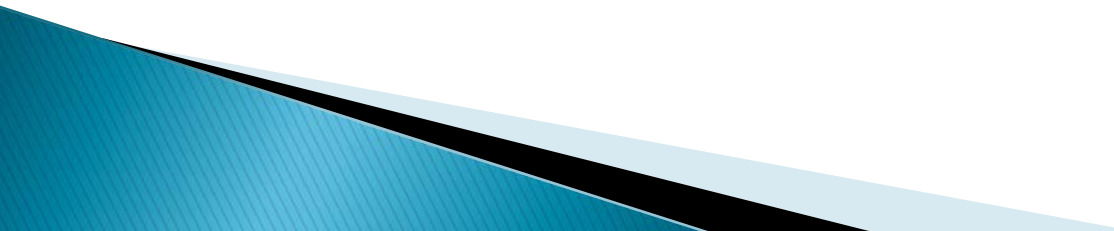
4. INDUSTRIAL WATER



Industrial – Current Practice

- ▶ Self-supplied water use requires permit. Doesn't imply ownership and not transferable (except Alberta)
 - ▶ Groundwater withdrawals exempt in some provinces
 - ▶ Fees are very low (Ontario \$3.71 / 1000 m³)
 - ▶ Not connected to regulation of discharges
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Industrial – Critical Assessment

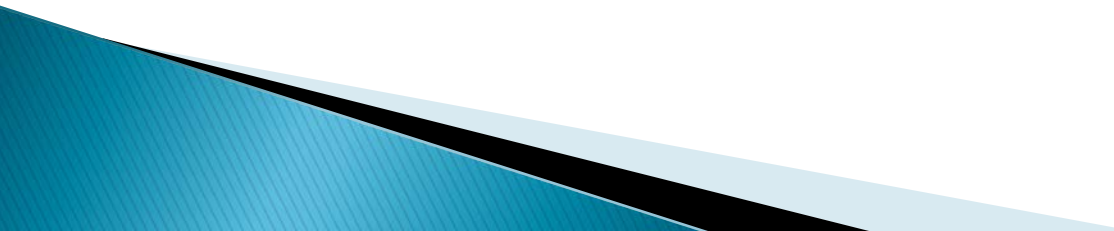
- ▶ Allocation of permits based largely on hydrologic criteria
 - ▶ Allocation framework promotes certainty for user
 - ▶ Little to encourage efficiency, conservation or innovation
 - ▶ Observed ↓ withdrawals due to changes in composition, output mix, technology change but not pricing
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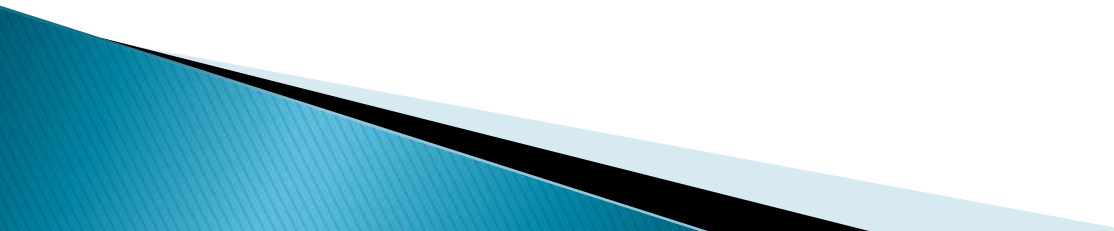
5. MUNICIPAL WATER



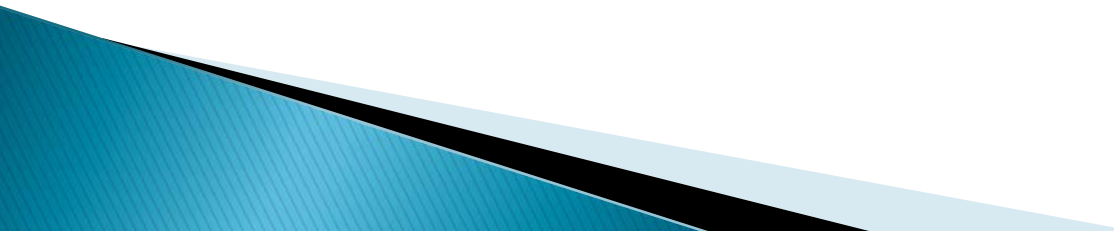
Municipal – Current Practice

- ▶ Little regulatory oversight. Some prov's requiring Full Cost Accounting
 - ▶ 28% households unmetered
 - ▶ Most metered households face constant prices. Range: \$1 – \$3 per m³
 - ▶ Sewage prices usually % of water price
 - ▶ Almost no peak, seasonal or zonal pricing
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Municipal – Critical Assessment

- ▶ Rates often based on incomplete cost accounting
 - ▶ Don't promote efficiency, conservation or innovation
 - ▶ Systems over-built and under-funded
 - ▶ Do little for environmental protection
 - ▶ Poorly understood cross subsidies
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6. LESSONS FOR CALIFORNIA

- ▶ Allocation framework should be comprehensive and integrated
 - ▶ Need to shift allocation framework away from providing certainty to promoting innovation & efficiency
 - ▶ Jurisdictional fragmentation weakens governance
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6. LESSONS FOR CALIFORNIA

- ▶ Reward decentralized innovation in governance (storm-water pricing, water quality trading)
 - ▶ Mis-pricing embedded in capital → biggest efficiency cost
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