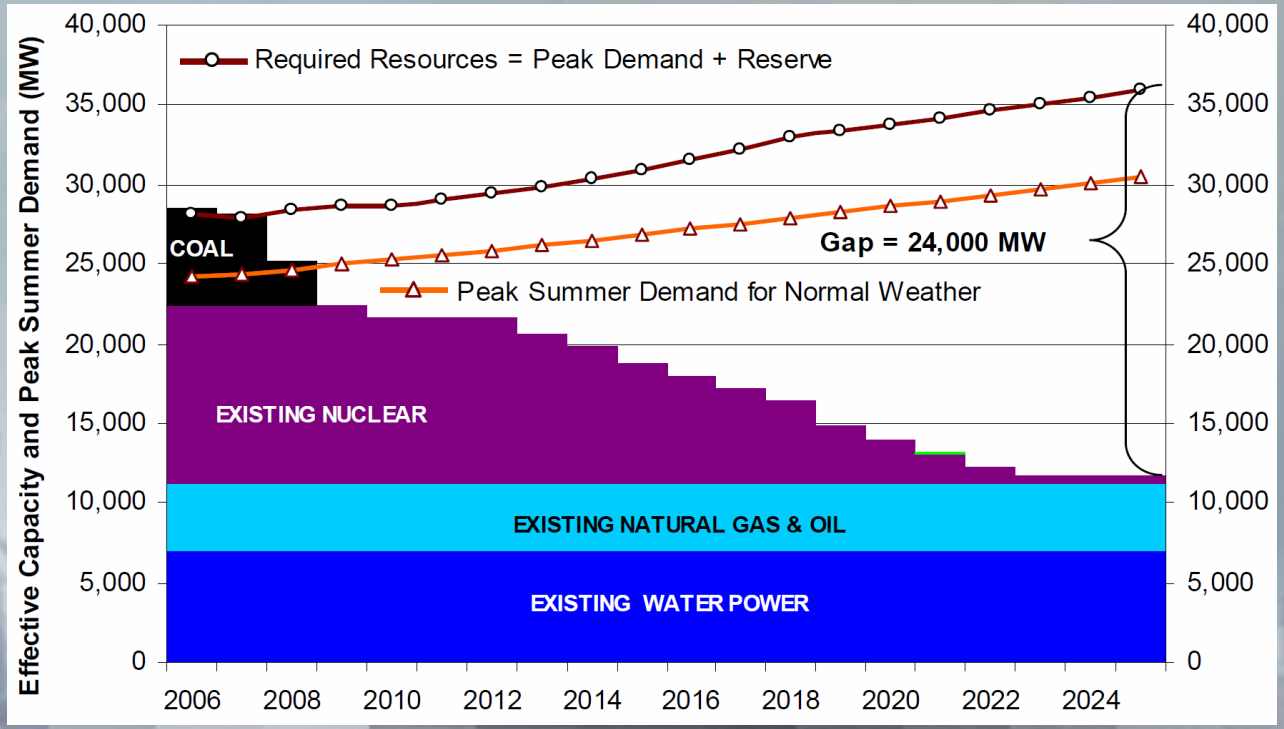
Smart meters and social housing

Social Housing Services Corporation
390 Bay Street, Suite 710
Toronto, Ontario M5H 2Y2
Tel: 416-594-9325
Fax: 416-594-9422
www.shscorp.ca

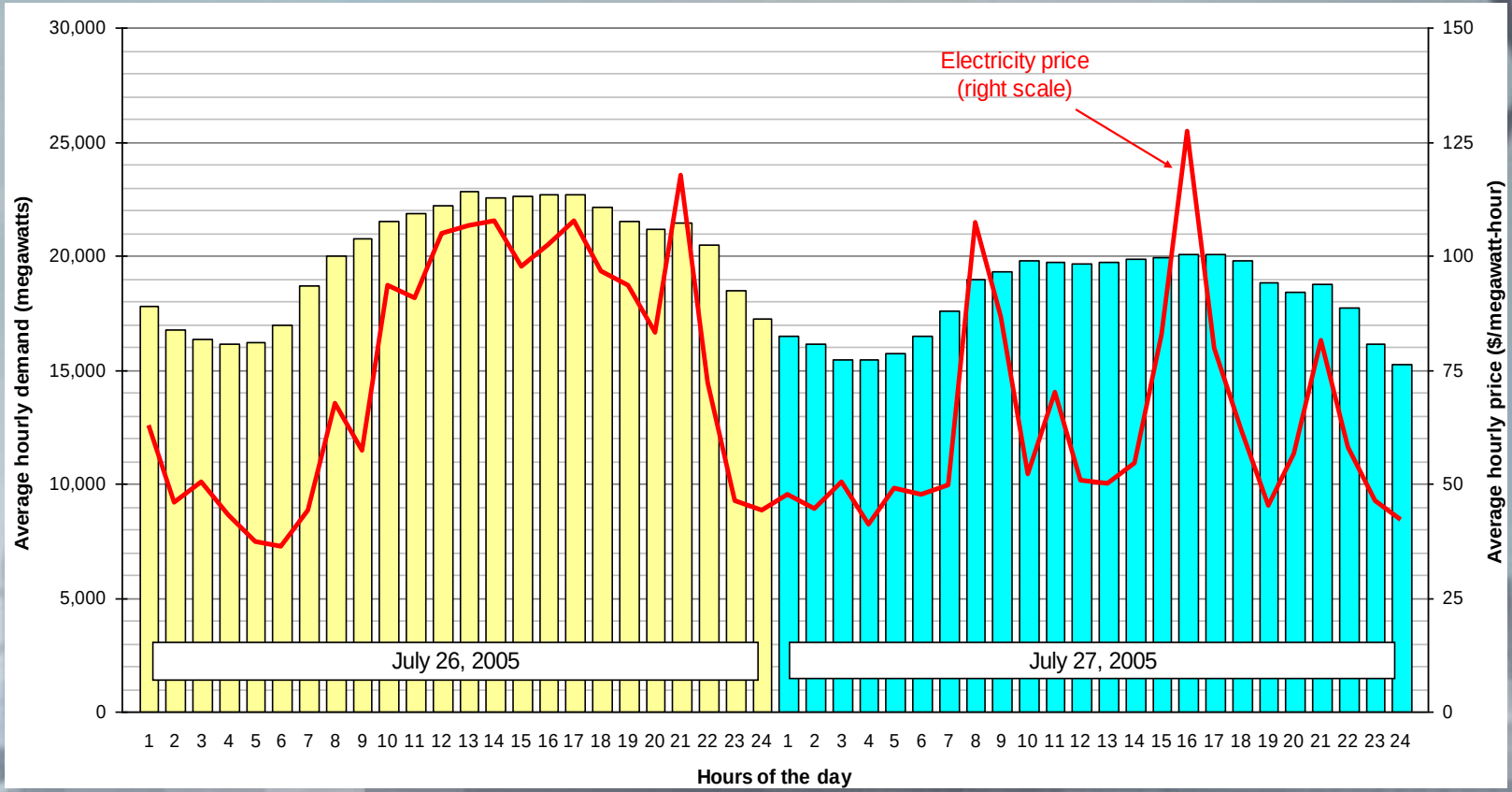
Why the Province is doing this (1):

- **Ontario has a growing shortage of power generating capacity**



Why the Province is doing this (2):

- **Much capacity is used only at peak periods**



Why the Province is doing this (3):

- Raising price in peak periods and lowering it at other times could flatten peaks, i.e. conserve electricity use at these times
- There would be less need to install generating capacity and to import expensive electricity

Cost issues for providers and tenants:

- Energy costs, including electricity, are housing providers' highest costs after mortgage payments
- Or, they are tenants' second-highest costs after rents (where tenants pay)
- They are the most volatile costs for housing providers or tenants, or both
- Energy costs need to be better controlled and better funded, for providers and tenants

Energy efficiency in existing developments:

- Much social housing was built cheaply with consequent high energy use, particularly electricity
- Capital investment to upgrade social housing can be very productive
- But housing providers do not have funds for this and cannot encumber properties
- Municipalities, the next level of responsibility, also do not have funds to raise efficiency
- The only federal program, EnerGuide for low-income households, has been cancelled

Energy efficiency in new developments:

- Up-front investment can increase energy efficiency even more effectively
- Social housing, which requires public funds, could be a model of design for efficiency
- It could be a trailblazer for progress towards a conservation culture
- High yields from up-front investments mean lower housing costs later

Imperatives to reduce energy use, including electricity:

- **Chiefly to avoid increased costs, even to reduce costs**
- **Tenants' *energy poverty* (next presentation) can be a health and safety concern**
- **Housing providers are already strained; no means to cover energy-cost increases**
- **Lower energy use means reduced environmental impacts**

SHSC committed to a conservation culture:

- SHSC is expanding its Energy Management Program (EMP): energy audits of existing buildings
- EMP results help housing providers reduce electricity use: Green Light Program
- SHSC contributes to Ontario's Low-Income Conservation and Demand Management Program
- It does this as the designated partner of the Ontario Power Authority's Conservation Bureau
- Above all, SHSC supports the interests of housing providers and their tenants

What housing providers think:

- SHSC surveyed housing providers and found considerable support for individual metering
- Providers expressed many worries about the feasibility of individual metering and its costs
- SHSC is endeavouring to secure legislation and programs that make sense for social housing
- SHSC strongly supports the ideals of the conservation culture, but not at all costs

How electricity is presently charged for residential users:

- The present rate is 5.5¢ or 6.4¢ per kilowatt-hour (kWh), no matter when in the day it is used
- The lower rate applies for the first 1,000 kWh each month (the first 600 kWh from April-October)
- That is the rate for *power* (electrical energy), which is typically about half of the electricity bill
- The other half comprises several charges. Most vary with power used, but not with total or time of day
- They include charges for delivery, administration, stranded debt retirement, and other items.

Advantages of individual metering and sub-metering:

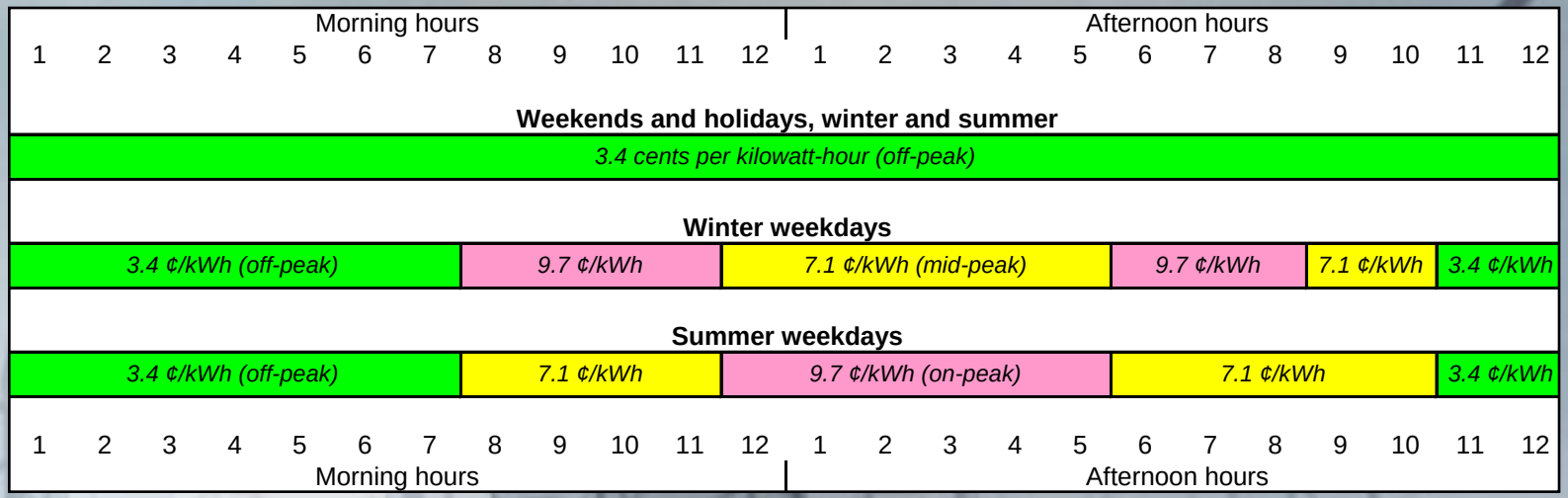
- Tenants can be charged according to the amount of electricity they use
- If smart meters are used, they can also be charged according to *when* they use the electricity
- When their units are metered, tenants can feel the cost impact of their peak electricity use
- As a result, they may act to reduce peak use

Disadvantages of individual metering and sub-metering:

- Re-wiring for some buildings would be a major job, sometimes not even possible
- Alternatively, wireless sensors could deployed in each unit, transmitting consumption data
- Putting energy cost on tenants raises possibility of energy poverty (next presentation)
- Some units (e.g., high up, north side) require more energy use; separate metering may be unfair
- With sub-metering, housing providers would still be ultimately responsible for electricity bills

How electricity will be charged when time-of-use (TOU) pricing is in effect:

- **TOU pricing is to be applied soon after a smart meter is installed**
- **Only the power portion of the bill will be affected (i.e., only about half the bill)**



- **Note that the highest rate (9.7¢/kWh) applies for 7 hours/weekday in winter and 6 hours in winter**

The paradox of TOU pricing, as proposed:

- TOU pricing will likely have a stronger effect in winter than in summer (7 vs. 6 hours/day)
- Since 2001, Ontario's peak demand has always been in the summer
- In 2005, air conditioning comprised 75% of the residential contribution to peak demand
- In 2005, space heating made no contribution to peak demand
- But, TOU pricing could raise costs more for winter electric heating than for summer air conditioning!

Why TOU pricing could raise costs for social housing tenants or providers:

- The effect of TOU pricing depends critically on the size of the highest rate and its duration
- It also depends on how much electricity is used and when it is used
- The highest rate will apply for a longer period of the day in winter than in summer
- Users with electric heating could thus be especially affected by TOU pricing
- The actual effect will depend on the actual rate (now 9.7¢/kWh), how much is used, and when

Potential impact of TOU pricing on tenants:

- Social housing tenants have much lower incomes than average
- They are also, except for TCHC tenants, much more likely to have electric heating
- And they may be more likely to be at home during peak periods
- Thus, they are much more likely to be victims of the TOU pricing paradox

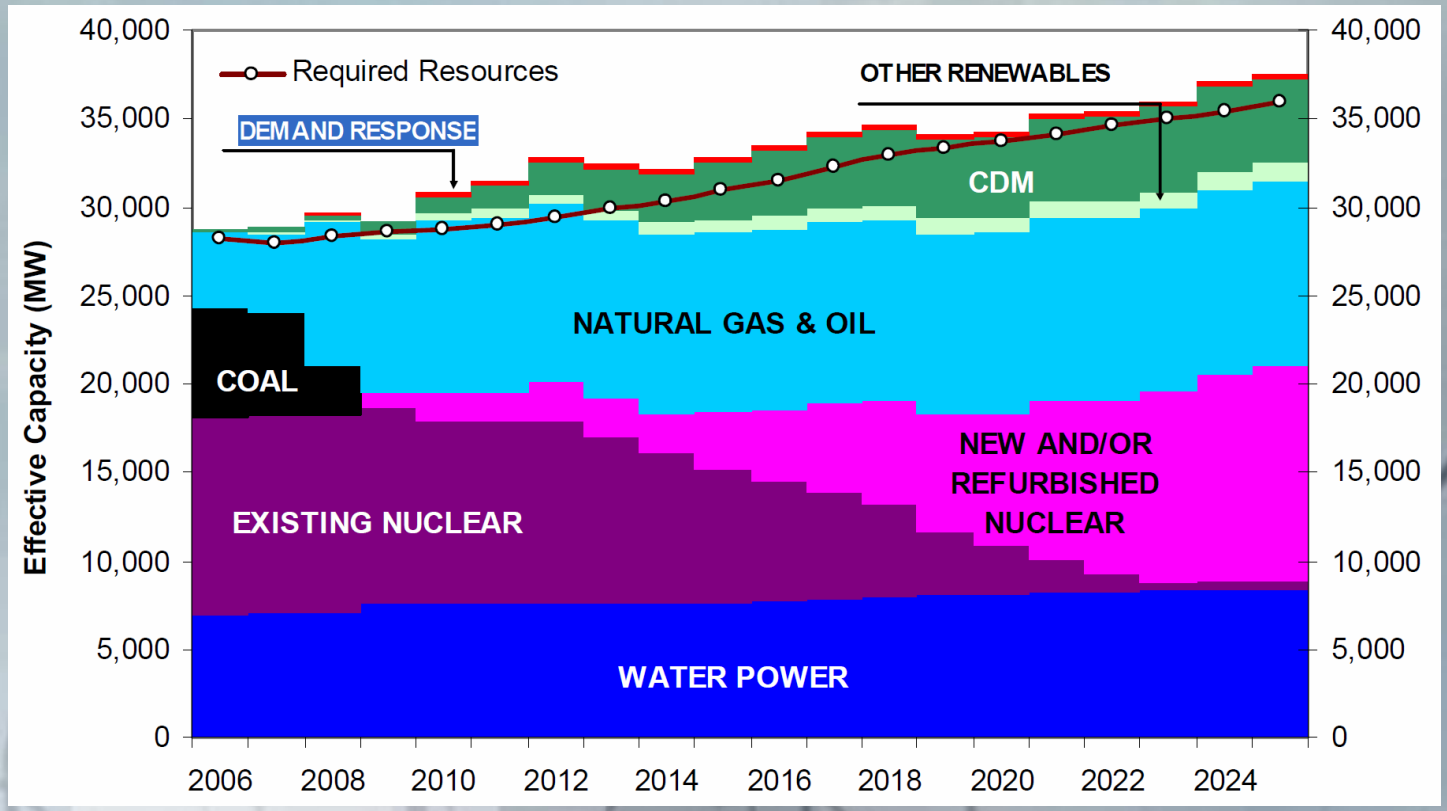
Potential impact of TOU pricing on housing providers:

- Only a small minority of social housing tenants pay electricity bills, even in co-ops
- Thus, providers will feel the impact, especially where there is electric heating
- Because tenants are not impacted, they will have no incentive to avoid peak use
- The main purpose of TOU pricing, to change behaviour, will not apply to social housing
- Yet, social housing could feel the brunt of the incoming TOU pricing regime

Education is another remedy:

- Tenants could be asked to avoid peak electricity use, to keep building operating costs down
- However, such appeals are usually ineffective, especially without feedback as to individual performance
- Only a smart meter could provide such feedback; in which case TOU could be applied

OPA scenario with most use of conservation and demand management:



- **Ontario's electricity conservation target for 2025 is now more ambitious: a reduction of 6,300 MW from peak use.**

SCHC's position and actions:

- Support smart meters for social housing if no unreasonable costs for providers and tenants
- Abolish energy poverty
- Examine load control, bulk purchasing, etc.
- Provide good information about electricity pricing
- Work with all who can help meet objectives