MAKING THE MOST OF YOUR ENERGY AUDIT & ACTION PLAN

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12 June 2018
Making the Most of your Energy Audit & Action Plan

- Why is this important (recap)?
- NABERS
- What’s in your energy audit & action plan
- Governance and decision-making
- Prioritising and financing upgrades
- Ideas to fast-track action
- Rebates & incentives
WHY IS THIS IMPORTANT? (RECAP)
Impact of Common Property

Common Area vs Private Electricity Consumption

Source data: City of Sydney, Smart Green Apartments pilot
RISING ELECTRICITY COSTS

Consumption vs Cost

- kWh
- $
SAVINGS POTENTIAL OVER NEXT 20 YEARS (NSW)

- 2,200 GWh electricity
- 1,300 PJ gas
- over 2 million tonnes CO$_2$e GHG emissions


Annual savings equivalents
- electricity used by 19,500 average Sydney households
- energy used by 7.8 million average compact fluorescent lamps
- carbon sequestered by planting 2.5 million trees

* Calculated at [http://www.epa.gov/cleanenergy/energy-resources/calculator.html](http://www.epa.gov/cleanenergy/energy-resources/calculator.html)
NABERS - The Game Changer

NABERS for Apartment Buildings
it's good for your buildings & your business
https://www.youtube.com/watch?v=eYb1jmPNJZY
NABERS FOR APARTMENT BUILDINGS

Understand the energy and water performance of your common areas

Launched 5th June
NABERS Rates Buildings against a 6-Star Scale

A language for sustainability
NABERS Guiding Principles

Based on metered performance
Technology neutral
Fair comparison
Simple yet robust
The **majority** say a **NABERS** star rating tool would be valuable when purchasing.

![Pie chart showing resident preferences.]

Most would like to receive this once at the point of sale, and on a **regular basis**.

![Pie chart showing new residents' preferences.]

Source: City of Sydney Council
WHY A NABERS RATING TOOL WOULD BE OF VALUE

Comparing buildings and environmental impact

Indicator of operating costs, re-sale value

Source: City of Sydney Council
NABERS for Apartments is a “watershed moment” for strata sustainability

NABERS for apartments could change the game

A high NABERS rating will indicate a strata community that is well-governed, has strong financials, good decision-making capabilities and good capital works plans with a budget to carry them out.

“It will become a KPI of a well-functioning building,” he said.

“I expect it will be adopted quickly by forward-looking strata corporations. It will also become a relevant tool for investment comparison.”

It will be a far quicker and more insightful guide than “trolling through OC meeting minutes” for detail on how the building and its committee function. Currently, that is the only way many potential buyers can gather information on how a building performs, he said.
YOUR THOUGHTS?
What's in your Energy Audit & Action Plan?
Energy audit

- Energy usage profiles and breakdown
- Billing and tariff analysis
- Irregularities
- Energy saving opportunities

Electricity Consumption by Category of Plant

- Lighting: 36.5%
- Cold Water: 15.6%
- Miscellaneous: 12.3%
- Pool: 2.7%
- Hot Water: 0.9%
- HVAC: 0.5%
- Lifts: 0.9%
OPPORTUNITIES

- Immediate
  - Tariff changes
  - Operational
- Short, medium & longer-term upgrades

- Upgrade of common area lighting;
- Installation of carbon monoxide sensors in the car park; and
- Installation of power factor correction equipment on the main switchboard.

1) Close gas account associated with the penthouse Spa (UP22);
2) Opt in to AGL’s ‘Business Savers’ gas offer to save 14% on usage charges;
3) Install a carbon monoxide (CO) monitoring system to control the car park ventilation system;
4) Replace the existing tubular fluorescent light fittings in the fire stairs and car park with new LED light fittings incorporating integrated occupancy sensors;
5) Replace existing gas pool heater with an electric heat pump;
6) Install a 25 kVar power factor correction unit on the main switchboard; and
7) Install a 20kW solar photovoltaic (PV) electricity generation on the roof.
Building Futures Assistance

- Site meeting post-audit
  - discuss the key outcomes & answer any questions
  - help develop a shortlist of opportunities
  - identify 1 or more opportunities to implement NOW, in part using the $5k or $10k funding from council

- Implementation assistance, e.g.
  - help get measures approved
  - seek quotes, compare, help select preferred supplier
  - assist with install process
Governance & Decision Making
EVERY OC IS DIFFERENT

- time
- priorities
- age
- lifecycle
- issues
- budgets
- politics
- personalities
- building management
- volunteers
- size
- plans
- skills
- processes
- strata management
**Considerations**

- Relevant legislation
  - where decisions must be made
  - restrictions
  - repair vs improvement

- Priorities
  - timeframe (short, medium, long-term)
  - objectives ($, GHG)

- Solutions
  - reputable suppliers
  - rebates & incentives
  - apples with apples

- Business cases
  - data / case studies
  - two futures

- Capital Works Fund Plan
  - consider efficiency
  - “bring forward” in time

Don’t fear EGMs
Restrictions on ‘Large’ Schemes

LARGE scheme - over 100 lots (101 lots or more), excluding parking and utility lots

- Annual budgets must list amounts for specific items
- At least two quotations for proposed expenditure over $30,000
- Strata committee cannot spend more than 10% above that estimated for any item or matter at an AGM
  - doesn’t apply to emergencies
  - owners corporation can lift the restriction
- Must note differences & reasons between budget estimates & capital works fund plan
No individual owner or strata committee member can make a decision for the owners corporation

- A decision can **ONLY** be made in one of three ways:
  - passing a resolution at a general meeting (AGM or EGM)
  - passing a resolution at a strata committee meeting
  - appointing a strata managing agent and delegating power to make decisions on certain matters

- No resolution needed to act on any mandatory requirements (identified by “shall” and “must”) of the Act and Regulations – because can’t pass resolutions to defy the Act!
WHERE DECISIONS ARE MADE

Strata Committee
- repair & maintenance (statutory duty)
- includes additions to building if necessary to keep common property in good repair
- Ordinary Resolution

Owners Corporation (AGM or EGM)
- improve or enhance the common property
  - add to common property
  - alter common property
  - erect new structure on common property
- inappropriate to maintain, renew, replace or repair the property
- Special Resolution
## Repair & Maintenance vs Improvement

<table>
<thead>
<tr>
<th>Repair &amp; Maintenance</th>
<th>Improvement</th>
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</thead>
<tbody>
<tr>
<td>Replace failed light globes with energy-efficient light globes</td>
<td>Replace fluorescent or halogen lighting with LED lighting</td>
</tr>
<tr>
<td>Power Factor Correction</td>
<td>Install carbon monoxide detectors on carpark exhaust fans</td>
</tr>
<tr>
<td>Install sub-meters for water monitoring</td>
<td>Install variable speed drives VSDs on pumps &amp; fans</td>
</tr>
<tr>
<td>Replace failed plant &amp; equipment with energy or water-efficient equipment</td>
<td>Replace working plant &amp; equipment with energy or water-efficient equipment</td>
</tr>
<tr>
<td></td>
<td>Install solar power or solar hot water</td>
</tr>
<tr>
<td>Action</td>
<td>Decision Maker</td>
</tr>
<tr>
<td>-----------------------------------------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Upgrade lighting e.g. fire stairs, car park, foyers</td>
<td>Owners Corporation</td>
</tr>
<tr>
<td>Power Factor Correction</td>
<td>Strata Committee</td>
</tr>
<tr>
<td>Install sub-meters for energy / water monitoring</td>
<td>Strata Committee</td>
</tr>
<tr>
<td>Adjust / install timers</td>
<td>Strata Committee</td>
</tr>
<tr>
<td>Power Factor Correction</td>
<td>Strata Committee</td>
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<tr>
<td>CO sensors</td>
<td>Owners Corporation</td>
</tr>
<tr>
<td>Variable speed drives</td>
<td>Owners Corporation</td>
</tr>
<tr>
<td>Solar PV / Hot Water</td>
<td>Owners Corporation</td>
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<tr>
<td>Maintenance contracts</td>
<td>Strata Committee</td>
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<tr>
<td>Lift upgrade</td>
<td>Owners Corporation</td>
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<tr>
<td>Cooling Tower adjustments</td>
<td>Strata Committee</td>
</tr>
<tr>
<td>Building Management System</td>
<td>Owners Corporation</td>
</tr>
<tr>
<td>Efficient pool heating</td>
<td>Owners Corporation</td>
</tr>
</tbody>
</table>
**Types of Resolutions**

- **Ordinary Resolution**
  - simple majority of votes i.e. 50.1%
  - all strata committee resolutions are ordinary resolutions

- **Special Resolution**
  - no more than 25% of the value of the votes actually cast (in person or by proxy) are against the motion
  - not the same as 75% or more in favour because some may abstain from voting

- **Unanimous Resolution**
  - no vote is cast against the motion
The Myth of the Special Resolution

- It’s not 75% of all owners
- Quorum is 25% of unit entitlements
- If just make a quorum, then at a minimum special resolution passed if no more than 25% of 25% are against
- For example:
  - Total unit entitlements: 100
  - 100 owners, all with 1 UE
  - Quorum: 25 UE present
  - Special resolution passed if no more than 6.25 people vote against
  - If all present vote, it’s only 19 for
- A lot easier with disinterested investor owners!
PRIORITISING AND FINANCING UPGRADES
Prioritising Upgrades - $ Basis

- Building Shell
- Lifts
- Renewable Supply
- Water Heating
- Power Factor Correction
- HVAC
- Lighting
- Operations / Timers / Metering / Maintenance

Increasing complexity of investment / decreasing payback

- 0-2 years: Operations / Timers / Metering / Maintenance
- 1-3 years: Lighting
- 2-4 years: HVAC
- 2-5 years: Power Factor Correction
- 3-6 years: Water Heating
- 3-5 years: Renewable Supply
- 1-2 years: Lifts
- 2-4 years: Building Shell

Green Strata
Prioritising Upgrades – GHG Basis?

1 Star: Poor
2 Stars: Below Average
3 Stars: Average
4 Stars: Good
5 Stars: Excellent
6 Stars: Market Leading
FUNDING IMPROVEMENTS

- Existing Capital Works fund
  - planned accumulation
- Special levy
- Borrow
  - owners corporation can borrow money
  - unsecured loan – can’t offer common property as security
  - decision at a General Meeting
Ideas to Fast-track Action
Payback period (simplest)
- The length of time required to recoup the initial cost
- Payback Period = Initial Cost ÷ Annual Savings

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<table>
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<tr>
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<tbody>
<tr>
<td>Initial cost</td>
<td>$10,000</td>
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<tr>
<td>Annual savings</td>
<td>$5,000</td>
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<tr>
<td>Payback period</td>
<td>2 years</td>
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</table>

- Remember to include maintenance costs
- Use your own cost of energy
Return for Capital Works Fund

- Interest (3%?) vs annual savings

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tbody>
<tr>
<td>Energy reduction</td>
<td>70%</td>
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<tr>
<td>Energy Savings p.a.</td>
<td>$6,500</td>
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<tr>
<td>Maintenance savings p.a.</td>
<td>$5,000</td>
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<tr>
<td>Total benefit p.a.</td>
<td>$11,500</td>
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<tr>
<td>Total installation cost</td>
<td>$20,000</td>
</tr>
<tr>
<td>Payback</td>
<td>1.7 years</td>
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</tbody>
</table>

Capital Works Fund interest forgone (3% p.a.) $600

- 3% vs 58% return
PRE-APPROVAL MOTIONS

For large strata schemes, to remove the spending limit

REMOVAL OF THE LIMITATION IMPOSED UNDER SECTION 102(2)

Motion: That the Owners Corporation removes the limitation imposed under Section 102 (2) of the Strata Schemes Management Act 2015 generally or in relation to any particular item or matter.

To obtain pre-approval for energy & water savings initiatives

ENERGY & WATER SAVING INITIATIVES

Motion: That the Owners Corporation SPECIALLY RESOLVES pursuant to section 108 of the Strata Schemes Management Act 2015 (NSW) and authorises the Strata Committee to implement any energy and water saving initiatives - which may include replacement of, or additions to common property - that have an initial payback period of 3 years or less.

Approval to pay for Sydney Water’s Waterfix program

WATER EFFICIENCY

Motion: That the Owners Corporation pays for Sydney Water’s WaterFix™ program (or an equivalent service) to be undertaken in each lot, subject to the approval of the owner(s) of each lot.
Motions:

That the Energy Saving Action Plan showing forecast savings of some $xx,xxx per year, prepared as part of the Owners Corporation’s participation in Waverley Council’s Building Futures program, be adopted for implementation in the 2018 / 2019 financial year.

That pursuant to Sec 108 of the Strata Schemes Management Act 2015 the Owners Corporation SPECIALLY RESOLVES to make any changes to common property that may be required for the effective implementation of the Energy Saving Action Plan.

Note: Special Resolution to change common property
Motions:
That the Owners Corporation SPECIALLY RESOLVES to upgrade the lights in the residential floor corridors to LEDs with motion sensors at a cost of $20,000 plus GST.

Explanatory note: The new lights match the colour temperature of the existing fluorescent tubes. This will save 70% p.a. ($6,500) on energy costs, and $5,000 p.a. on maintenance costs. The payback period is 1.7 years.
Cumulative expenditure on residential corridor lighting over the next 5-year period (including purchase, installation, energy and maintenance costs) will be $33,929 (at current electricity prices).

OR

That the Owners Corporation RESOLVES to retain the existing lights in the residential floor corridors and acknowledges that cumulative expenditure on those lights over the next 5-year period (energy & maintenance costs) will be $71,429 (at current electricity prices).

Requires a conscious decision to do nothing & not reduce costs
Your friends
- ‘Paper’ SC meetings & other electronic forms
- EGMs

Don’t bury upgrades in budgets
- Special vs ordinary resolution
Rebates & Incentives
You're already paying for it on each energy bill

Financial incentive for undertaking certain energy efficiency projects

Important to consider before commencing upgrades
Financial incentive to reduce CO2 emissions by improving energy efficiency in residential and commercial buildings - without reducing production or service levels

Currency is Energy Saving Certificates (ESCs)
- generated from a Recognised Energy Savings Activity
- one ESC represents one tonne of CO₂ saved
- possible to receive ESCs upfront for 10 years’ savings
- created & traded by Accredited Certificate Providers (ACPs)

All electricity retailers obligated to buy ESCs to offset emissions

Accredited Certificate Providers (ACPs)
- accredited by IPART
- do all the hard work
- may also be product suppliers – apply caution
- must be engaged before a project is complete

Consider establishing a long-term relationship with an ACP
01 Owners corporation undertakes energy saving retrofits to common property

02 Accredited Certificate Provider (ACP) provides evidence of savings to IPART & generates Energy Saving Certificates (ESCs)

03 ACP trades ESCs with energy retailers at market price, generating cash

04 Owners corporation gets the money, less any ACP fee or commission
SMALL-SCALE RENEWABLE ENERGY SCHEME

- You're already paying for it on each energy bill
- Financial incentive for installing small-scale renewable energy systems
- Important to consider before commencing upgrades

- solar PV
- wind
- solar hot water
- air source heat pumps
SMALL-SCALE RENEWABLE ENERGY SCHEME

Scheme operates until 2030

Currency is **Small-scale Technology Certificates (STCs)**
- created 'up front' for the system’s expected power generation from the installation year until 2030
- calculated based on the amount of electricity a system produces or replaces (i.e. electricity from non-renewable sources)

Generally you’ll assign the right to create certificates to an agent in return for a lower purchase price

All electricity retailers obligated to buy and surrender STCs annually

YOU’RE ALREADY PAYING FOR THEM – SO USE THEM!

### Supply period
1 Jan 2018 to 31 Jan 2018 (31 days)

<table>
<thead>
<tr>
<th></th>
<th>Days</th>
<th>Quantity</th>
<th>Rate (incl. Energy losses)</th>
<th>Charge</th>
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</thead>
<tbody>
<tr>
<td><strong>Energy Charges</strong></td>
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<tr>
<td>Peak</td>
<td>3873.77 kWh</td>
<td>$0.152492/kWh</td>
<td>$0.162746/kWh</td>
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<td>Shoulder</td>
<td>9476.682 kWh</td>
<td>$0.152492/kWh</td>
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<td>$1,542.29</td>
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<td>Off Peak</td>
<td>4977.515 kWh</td>
<td>$0.098008/kWh</td>
<td>$0.104598/kWh</td>
<td>$520.64</td>
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<tr>
<td><strong>Sub-total</strong></td>
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<td>$2,693.37</td>
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<td><strong>Network Charges</strong></td>
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<tr>
<td>Network Peak</td>
<td>6611.053 kWh</td>
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<td>Network Shoulder</td>
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<td>Network Off Peak</td>
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<td>$0.012287/kWh</td>
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<td>Summer Demand</td>
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<td>$10.03200/kVA</td>
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<td>Network Access Charge</td>
<td>31 days</td>
<td>$18.72900/day</td>
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<td>$1,678.09</td>
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<td><strong>Renewable Energy Charges</strong></td>
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<tr>
<td>E&amp;REC – LRET Flexi Renewable</td>
<td>18327.967 kWh</td>
<td>$0.012418/kWh</td>
<td>$0.013253/kWh</td>
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<td>E&amp;REC – SPES Flexi Renewable</td>
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<td><strong>Other Charges</strong></td>
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<td>AEMO Pool Fee</td>
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<td>AEMO Ancillary Charge</td>
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<td>Retail Service Fee</td>
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<td>$50.63</td>
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<td>Interest Charges*</td>
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<td><strong>Sub-total</strong></td>
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<td><strong>Total current charges (incl. GST)</strong></td>
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<td>$5,714.04</td>
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</table>

* Not subject to GST

Highest actual metered demand period is 79kVA, recorded on 27/01/2018 at 15:30
RESOURCES
THANKS & QUESTIONS