



# **Submission on the Building Sustainability Index (BASIX) Target Review**

prepared by

**EDO NSW**  
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## About EDO NSW

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**Successful environmental outcomes using the law.** With over 25 years' experience in environmental law, EDO NSW has a proven track record in achieving positive environmental outcomes for the community.

**Broad environmental expertise.** EDO NSW is the acknowledged expert when it comes to the law and how it applies to the environment. We help the community to solve environmental issues by providing legal and scientific advice, community legal education and proposals for better laws.

**Independent and accessible services.** As a non-government and not-for-profit legal centre, our services are provided without fear or favour. Anyone can contact us to get free initial legal advice about an environmental problem, with many of our services targeted at rural and regional communities.

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Submitted to:

NSW Department of Planning & Infrastructure  
via <http://www.basix.nsw.gov.au/basixcms/target-review>

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## Introduction – BASIX Target Review

As an independent community legal centre specialising in public interest environmental law, EDO NSW welcomes the opportunity to comment on the review of standards and targets for the NSW BASIX scheme.

Since its inception in 2004, BASIX has made tangible reductions to water and energy use in new homes across NSW.<sup>1</sup> More recently though, a lack of regular target updates, limitations in the BASIX SEPP,<sup>2</sup> and a focus on the residential sector only, have hindered improvements beyond the original BASIX targets.

The Planning Department estimates savings of 70 billion litres of water and 2 million tonnes of CO<sub>2</sub> equivalent emissions.<sup>3</sup> While these are significant numbers, and buildings are a major contributor to human impacts on the environment, the savings estimated from BASIX remain a very small proportion of overall NSW greenhouse emissions and water use.<sup>4</sup> Two conclusions follow from this. First, for maximum effectiveness, mandatory sustainability targets and codes must be more robust in their aims and outcomes. Second, such targets and codes must form part of a more comprehensive suite of regulatory, voluntary and incentive measures for the environmental sustainability of our cities and settlements.

It is timely that the targets for water efficiency, energy efficiency and thermal comfort be updated in 2014, in time for a new planning system. While EDO NSW supports the raising of BASIX targets in principle, we consider that the limited scope of this review may be a missed opportunity – both to resume a national leadership role and ‘make NSW number one’ in sustainability; and to consider NSW building sustainability in a more holistic way.

Accordingly, **Part One** of this submission comments on the proposed review targets and documentation. **Part Two** outlines options for broadening the current review, and improving or supplementing BASIX with additional building sustainability mechanisms.

## Part One - Comments on the proposed review targets

### Limited scope of this review

The proposals in the current review are limited to raising certain targets in the three existing areas of residential water use, energy use and thermal comfort. As the supporting research paper notes: ‘This target review does not analyse the BASIX policy more generally’. It therefore excludes ‘new indices’, ‘additional development types’ and ‘compliance monitoring’.<sup>5</sup> As discussed under Part Two below, this review should seize the opportunity to consider and consult on broader policy questions around BASIX and building sustainability.

<sup>1</sup> BASIX applies to all residential developments in NSW that cost \$50,000 or more. This includes alterations and additions to existing dwellings. BASIX imposes a range of energy and water efficiency targets. At their most stringent, these targets require energy and water use reductions of 40% over existing dwellings; while multi-unit residential developments of over 6 storeys are only required to meet reduction targets of 20% (by comparison to average NSW water consumption and greenhouse gas emissions in 2002-03).

<sup>2</sup> The *SEPP (Building Sustainability Index: BASIX) 2004* (BASIX SEPP) overrides any environmental planning instrument that is inconsistent with it (cl 7).

<sup>3</sup> NSW Department of Planning & Infrastructure, *BASIX Target Review: Frequently Asked Questions* (Dec. 2013).

<sup>4</sup> For example, comparisons in 2009 estimated savings of 0.04% of annual NSW greenhouse emissions, and less than 0.4% of water supplied to the Sydney area. See A. Thorpe and K. Graham, ‘Green buildings – are codes, standards and targets sufficient drivers of sustainability in NSW?’ (2009) EPLJ 486, at 488.

<sup>5</sup> (Among other things.) NSW Department of Planning and Infrastructure, *BASIX Target Review – Supporting Research Paper*, p 1. The paper notes, ‘These matters are being separately addressed as part of the ongoing BASIX improvement program.’ The implications of this are unclear.

## The review proposes only moderate increases to existing targets

In brief, the Planning Department's review proposes that:

- **water use targets** will change to save between 20% (**BASIX 20**) and 50% (**BASIX 50**) on baseline consumption (but no increase to water savings for coastal high-rise);
- **energy use targets** will change to between BASIX 10 and BASIX 50; and
- **thermal comfort targets** (heating and cooling) will also change, equivalent to 5.5 to 6 stars out of 10 under the Nationwide House Energy Rating Scheme (**NatHERS**).

Specific targets vary, but this represents an average increase of 5-10% in water and energy saving requirements (except for coastal high-rise); and a 1-star increase on thermal comfort under NatHERS.<sup>6</sup> Considering the existing targets are 8-10 years old; and the changes in industry practice, market and environmental indicators since 2004, this is a small increase only.

While the review documents provide considerable detail, it is not always clear why particular paths were taken to arrive at these modest targets. Also, the benefit-cost analysis only compares the proposed targets with a 'business as usual' approach (discussed below). Different paths – with more stringent parameters at each decision stage – could lead to greater benefits over time. We provide some examples below.

### Detached houses

In calculating water and energy targets for detached houses, it is unclear why targets were initially set as 'not more than 50'.<sup>7</sup> This seems an unnecessary limitation, particularly noting that UrbanGrowth NSW achieved *average* ratings of 55 for energy and 47 for water in 2012 – 'relatively easily and at minimal cost'<sup>8</sup>; and the average *existing* BASIX home is reportedly achieving energy and water efficiency scores 'between 3-6 per cent higher than its minimum target.'<sup>9</sup> If the aim of the BASIX update is to stimulate improved efficiency and innovation, it is also unclear why 'the mid-point of the improved and best-practice scores' was settled on, rather than a point closer to 'best-practice'; or why second-pass targets were 'rounded down [not up] to the nearest multiple of 5'. Each of these examples limits the targets proposed.

### Multi-unit dwellings

Another example relates to multi-unit dwelling targets<sup>10</sup> – particularly the lack of any increase to water efficiency standards for multi-unit high-rise dwellings in coastal areas. These targets are important given that, in recent years, over 80% of new dwellings in Sydney have been multi-unit types;<sup>11</sup> and because most high-rise development in NSW will continue to occur in Sydney and other 'coastal' areas.

In addition, multi-unit apartments typically have very little irrigation demand. Outdoor water demand equates to approximately 20% of detached house water demand.<sup>12</sup> Without this water demand, multi-unit apartments get a 'free' water reduction simply through their built

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<sup>6</sup> Targets vary depending on region, climate and housing type (detached, attached, multi-unit).

<sup>7</sup> Targets were set 'in three passes'. Department of Planning, *BASIX Target Review – Supporting Research Paper* (Dec. 2013), p 6.

<sup>8</sup> Department of Planning, *BASIX Target Review – Supporting Research Paper* (December 2013), p 3. UrbanGrowth NSW (formerly Landcom) is a government initiative to drive investment in key locations in NSW and help underpin the future prosperity of urban and regional centres ([www.urbangrowth.nsw.gov.au](http://www.urbangrowth.nsw.gov.au)).

<sup>9</sup> Allen Group, BCA for BASIX, p 26.

<sup>10</sup> Department of Planning, *BASIX Target Review – Supporting Research Paper* (December 2013), p 11.

<sup>11</sup> Department of Planning, *Sydney over the next 20 years: Discussion Paper* (2012), p 13.

<sup>12</sup> Department of Planning, BASIX Ongoing Monitoring Program, Single Dwelling Outcomes 05-08

form, making significant water reductions easy to achieve without water reuse or significant water efficiency interventions.

Furthermore, as existing multi-unit targets have not been increased since BASIX began, and a similar opportunity may not arise for a further decade, we submit that higher water targets should be adopted for multi-unit dwellings now.

While the supporting research paper (p 7) suggests limitations to further high-rise *energy* increases (beyond +5%), specifics are limited. Those scenarios could be re-examined with a view to working further towards best practice. This could be implemented as a progressive increase (+5 now and +5 again in two years). Where efficiency limitations relate to large spaces such as car parks, EDO NSW supports the examination (and scheduled implementation) of supplementary building sustainability measures, such as precinct-scale BASIX assessments and long-term compliance requirements.<sup>13</sup>

### Recognising solar power to deliver energy savings

The proposed BASIX review targets do not take adequate account of the impact of solar market penetration and the diminishing cost of solar electricity – both since BASIX began, and likely future price drops due to technology improvements and economies of scale. By March 2012, over 160,000 NSW households and small businesses had installed solar photovoltaic systems.<sup>14</sup> A worldwide study in 2013 noted the US price of small-scale installation fell 80% between 1998 and 2012, and that Australian prices were as much as 40% cheaper than the US, supported by government policy settings.<sup>15</sup> The study noted, ‘having the right policies in place at all levels of government remains the greatest opportunity for cost reductions’.<sup>16</sup>

The original BASIX scheme greatly assisted the transition to solar hot water.<sup>17</sup> Similarly, the Government should adopt stronger BASIX energy targets to acknowledge the improving affordability of solar electricity to date, and to support further increases in solar electricity penetration for new homes (and other buildings). The limited energy target increases in the BASIX review, and lack of references to solar electricity in guidance material and diagrams,<sup>18</sup> suggest this opportunity has not been fully seized.

### Efficient appliances

A further problem previously identified with the BASIX scheme is the ability to ‘trade-off’ efficient appliances (which have a relatively short lifespan) against poorer design features.<sup>19</sup> While limited in detail, the BASIX research paper states that efficiency of available appliances will be increased where *current* BASIX appliance selections fall ‘consistently below the level of the market average...’ (p 12). Given the aims of BASIX to advance sustainability beyond business-as-usual, a more ambitious approach to permitted appliances could be included than that proposed in the review.

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<sup>13</sup> See Department of Planning, *BASIX Target Review – Supporting Research Paper* (December 2013), p 11.

<sup>14</sup> EPA, *NSW State of the Environment 2012*, p 30.

<sup>15</sup> US Department of Energy’s Lawrence Berkeley Labs, *Tracking the Sun* (July 2013), available at <http://emp.lbl.gov/sites/all/files/lbnl-6350e.pdf>. Cited in G. Parkinson, ‘Why Australian rooftop solar PV prices are cheaper’, 8 August 2013, at <http://reneweconomy.com.au/2013/why-australian-rooftop-solar-pv-prices-are-cheaper-98991>.

<sup>16</sup> Ibid. Cited in G. Parkinson, ‘Why Australian rooftop solar PV prices are cheaper’, 8 August 2013.

<sup>17</sup> See, for example, *BASIX Ongoing Monitoring Program – Single Dwelling Outcomes – 05-08*, p 11, available at: <http://www.basix.nsw.gov.au/basixcms/about-basix/news/reports.html>.

<sup>18</sup> See for example, *BASIX Target Review: FAQs*, p 3; and ‘*Have Your Say*’ brochure, diagram p 3.

<sup>19</sup> See Thorpe and Graham (2009), 26 EPLJ 486, at 489.

### Use of simulations and testing of thermal comfort ratings

With regard to thermal comfort ratings, given the reliance on NatHERS ratings, the Department should verify environmental outcomes and performance for the NatHERS system. Depending on the results of this analysis, further increases to thermal comfort requirements may be required. The Department should also cross-check physical design differences from the 'DIY method' vs simulation modelling to verify whether each pathway results in sufficiently stringent outcomes (for example, in relation to minimum eave width).

**Recommendation:** *The Planning Department should articulate alternative pathways to higher targets across a range of BASIX indicators, including:*

- *removing the BASIX 50 ceiling on detached housing;*
- *increasing water efficiency standards for coastal multi-unit high-rise, and considering alternative mechanisms or future scheduled increases for high-rise energy targets;*
- *raising energy targets to recognise and further support the cost-effective market penetration of solar electricity;*
- *ensure targets support increased demand for higher energy- and water-efficient appliances (rather than modest increases to the current 'market average' only), and redressing the negative outcomes of trading-off appliances against inefficient design;*
- *verifying environmental outcomes and performance from NatHERS ratings, and increasing thermal comfort requirements based on the results of this analysis.*
- *cross-checking thermal comfort design differences from the 'DIY method' vs simulation modelling – does each pathway result in sufficiently stringent outcomes?.*

### **Review documents do not provide data on alternative options**

As indicated above, while EDO NSW supports increasing the BASIX targets in principle, further information is needed on alternative targets to determine whether *higher* increases could deliver additional benefits to the environment, homeowners and the State of NSW. The review materials would be more useful and comprehensive if they compared a *range* of target options in order to identify the most appropriate policy changes.

EDO NSW notes the preparation of a detailed benefit cost analysis<sup>20</sup> (**BCA**) for the BASIX review. The BCA projects a range of quantified and qualitative benefits for the proposed targets, and estimates an overall net financial benefit of \$511 million over 40 years.<sup>21</sup> It also calculates a 'benefit-cost ratio' (generally positive) for 12 representative dwelling types.<sup>22</sup> However, the BCA only assesses 'the impacts of the incremental change in the BASIX policy' – i.e. the new targets proposed by the Department – compared with existing targets ('a with/without comparative metric'<sup>23</sup>).

A comparative assessment of a range of target options (and projected costs and benefits) would assist the community to assess whether *higher* increases in the BASIX targets would deliver greater net benefits than the targets proposed. This seems a distinct possibility – including based on evidence and data in the BCA itself. For example, the BCA notes significant price increases projected for water, electricity and gas over the next 50 years.<sup>24</sup> It notes elsewhere that, 'Over time, as utility prices increase, these benefits [i.e. savings on

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<sup>20</sup> Benefit cost analysis is an economic appraisal technique often used to compare a range of policy options, in order to select the most appropriate option.

<sup>21</sup> The Allen BCA estimates \$1.3 billion in household savings less \$794m increased capital costs for buildings. This assumes a social discount rate of 7%. A lower social discount rate (which prioritises future benefits) projects a higher net benefit of some \$1.62 billion. See Allen Group, BCA for BASIX, pp 26-27.

<sup>22</sup> Allen Group, BCA of BASIX changes, pp ix and 17-18.

<sup>23</sup> Allen Consulting Group, Benefit-Cost Analysis of proposed BASIX stringency changes (2013), p 4.

<sup>24</sup> See Appendix D to the BCA. For example, these figures approximate that water and gas prices may double in the next 20 years and triple or quadruple within 30 years. Electricity prices could also double in the next 40 years.

homeowners' utility bills] will increase'.<sup>25</sup> Furthermore, the BCA notes, 'As the proposed changes are incremental, there are only very limited costs expected to governments and industry.'<sup>26</sup> While we do not have the benefit of detailed comparisons, it seems clear that money spent to reach higher building efficiency and sustainability targets now will pay increasing dividends, helping to relieve cost of living pressures as future utility prices rise.

**Recommendation:** *The NSW Government should provide further information and analysis on whether higher targets would deliver a greater net benefit to the community. These include direct benefits such as lower utility bills and improved climate change readiness; and indirect benefits such as lower greenhouse emissions and support for industry innovation.*

### Further reasons why the BASIX review should set higher targets

EDO NSW submits there are a range of additional reasons why the proposed targets in the BASIX review may not be stringent enough.

First, as noted above, the average BASIX home is already achieving energy and water efficiency scores 'between 3-6 per cent higher than its minimum target',<sup>27</sup> while UrbanGrowth achieved an average performance of BASIX 47 for water and BASIX 55 for energy in 2012.<sup>28</sup> 'In most cases these increased targets were achieved relatively easily and for minimal additional costs.'<sup>29</sup> If recently-built housing stock is *already* achieving these higher standards at minimal cost, this means that the proposed average 5-10% increase is already 'two-thirds met'. Indeed, UrbanGrowth's 2012 energy savings were higher than the maximum target proposed in the review (BASIX 50). This suggests that more ambitious targets could well be achieved, with benefits still exceeding costs.

Second, higher BASIX efficiency standards will further stimulate technological innovations in the coming decade. The review notes that BASIX provides indirect benefits for industry innovation, 'providing a stimulus to businesses involved in innovative sustainable technology and design.' Furthermore, 'increases to BASIX's stringency settings will continue to drive innovation and efficiency in the market...' through the flexible, outcomes-based promotion of feasible alternative options.<sup>30</sup> However, this benefit may be counteracted if targets are set too low, are infrequently reviewed, and act as a 'ceiling' on innovation by prohibiting more ambitious mandatory targets by councils. By contrast, higher targets, the prospect of more frequent reviews, and removing the sustainability 'ceiling' would present new opportunities for cleaner industries in NSW; and respond to challenges such as drought, biodiversity loss and climate change.<sup>31</sup>

Third, while EDO NSW supports more frequent target reviews, it is even more important that BASIX targets are set higher now if this may be the only target review in the next 10 years.<sup>32</sup> This is a critical period for addressing Australia's greenhouse gas emissions.<sup>33</sup> As the 2010 *Our Cities* report noted, 'much more still needs to be done within communities, business and governments at all levels to mitigate climate change impacts.'<sup>34</sup>

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<sup>25</sup> Allen Consulting Group, Benefit-Cost Analysis of proposed BASIX stringency changes (2013), p xi.

<sup>26</sup> Allen Consulting Group, Benefit-Cost Analysis of proposed BASIX stringency changes (2013), p xi; also p 24.

<sup>27</sup> Allen Group, BCA for BASIX, p 26.

<sup>28</sup> Department of Planning, *BASIX Target Review – Supporting Research Paper* (December 2013), p 3.

<sup>29</sup> NSW Department of Planning and Infrastructure, 'BASIX Target Review – Supporting Research Paper', p 3.

<sup>30</sup> Allen Group, BCA of BASIX changes, pp x and 25.

<sup>31</sup> See for example, Ernst & Young, *Business opportunities in a low carbon economy*, Report to Industry and Investment NSW (2010). See also City of Sydney, *Draft Green Roofs and Walls Policy* (2013).

<sup>32</sup> According to the Allen BCA, 'The effective life of the regulation is assumed to be 10 years.' (p 5)

<sup>33</sup> Australia's Climate Commission has warned that 2011-2020 is 'The Critical Decade' to address climate change, for Australia and the globe. See for example: <http://apo.org.au/research/critical-decade-2013-climate-change-science-risks-and-responses> (June 2013). See also EPA, *NSW State of the Environment 2012*, p 27.

<sup>34</sup> Australian Government, *Our Cities – The challenge of change* (2010), p 67.

With a potential net cost of '\$0' for reducing a ton of CO<sub>2</sub> (due to lower utility bills),<sup>35</sup> BASIX provides an efficient means of reducing NSW residents' carbon footprint, which remains one of the highest in the world.<sup>36</sup> The benefits of greenhouse reduction may also be increasingly valued in the absence of a national carbon price – noting that the soon-to-be-abolished carbon price was factored into IPART's May 2009 review of climate change mitigation measures; and the BCA for BASIX.<sup>37</sup> Another co-benefit of a further increase in energy targets would be its contribution to the NSW State Plan goal for 20% renewable energy by 2020.

### **BASIX targets should be reviewed on a more frequent and regular basis**

The BCA for the BASIX review projects the effective life of the proposed regulation as 10 years, after which time further changes may be expected.<sup>38</sup> The review documentation provides limited information on, or commitments to, future reviews. The limited targets proposed, coupled with ambiguous and discretionary timeframes for subsequent revisions, do not send sufficient signals to developers, builders, technology companies or consumers that they should invest to meet progressively higher targets. Proposing regular reviews and progressively increasing targets would assist development and market penetration of more energy and water efficient products and design solutions.

**Recommendation:** *The NSW Government should amend the BASIX SEPP to require a review and increase in BASIX targets at least every 4 years. The Planning Department should also consider staged or progressive increases to targets' robustness, to stimulate innovation and market penetration of increasingly efficient products.*

## **PART TWO – Options for broadening and improving BASIX**

### **Suggested directions for an expanded BASIX scheme**

EDO NSW has previously commented on the need for an *updated and expanded* BASIX scheme.<sup>39</sup> For example, we noted that the Government should:

- commit to update and expand BASIX in time for the new planning system
- link BASIX with any future 'code-based' development assessment
- strengthen minimum requirements of BASIX to reflect technological advances
- raise standards for multi-unit dwellings (currently subject to lower targets)
- extend its operation to commercial and industrial sites (not dwellings only)
- establish mandatory sustainability requirements in law for retrofitting existing buildings (in particular commercial and industrial), and
- set minimum (not maximum) baselines under BASIX, by removing the prohibition on councils and other consent authorities from imposing more stringent targets.

While higher BASIX targets are welcome and important, we believe there is impetus for an expanded scheme in line with the points above. Other countries highlight additional options.

<sup>35</sup> Allen Group, BCA for BASIX, p 3.

<sup>36</sup> See OECD, Climate change, Employment and Local Development in Sydney (2011), cited in NSW Government, *Sydney over the next 20 years* (2012), 24.

<sup>37</sup> See Allen Group, BCA for BASIX, p 22: 'This includes the effect of the CPM [carbon price mechanism]...'. The BCA notes the effect of the CPM was 'quantified' but not 'costed' to avoid double counting.

<sup>38</sup> Allen Group, BCA for BASIX, p 5.

<sup>39</sup> See submissions to the NSW planning review and Draft Sydney Metro Strategy, at [www.edonsw.org.au](http://www.edonsw.org.au).

## **BASIX should be extended to other building types (commercial and industrial)**

By focusing mandatory targets exclusively on the residential sector, the majority of the State's energy related emissions remain out of scope of the BASIX tool. While the residential sector contributes around 25% of energy-related greenhouse emissions, the commercial and manufacturing/industrial sectors together account for 55% of Sydney's emissions.<sup>40</sup> NSW energy consumption releases about 64 million tons of CO<sub>2</sub> equivalent per year. This suggests the savings from BASIX across NSW are around 0.35% of the State's annual stationary energy emissions (mainly electricity generation) – clearly a very small proportion.<sup>41</sup>

There is considerable public support for expanding BASIX beyond the residential sector. Notably, in the 2012 Sydney Metro Strategy consultations, 'Every submission that mentioned BASIX... suggested that it should be reviewed, and many supported its expansion to commercial development.'<sup>42</sup> New financing incentives such as environmental upgrade agreements also highlight opportunities for mandatory sustainability targets for retro-fitting existing buildings.<sup>43</sup>

**Recommendation:** *The NSW Government should conduct a broader review of BASIX, and propose a near-term timeframe to expand BASIX targets to commercial and industrial buildings, including retro-fitting of existing buildings.*

## **An expanded BASIX would contribute to State goals and create opportunities**

Goals 22 and 23 of the State Plan, *NSW 2021*, are to 'Protect our natural environment' and 'Increase opportunities for people to look after their own neighbourhoods and environments'. More detailed targets aim to 'minimise impacts of climate change in local communities' and 'increase renewable energy' to 20% by 2020.<sup>44</sup>

The previous *Metropolitan Plan for Sydney 2036* also included targets to:

- Reduce greenhouse gas emissions from the manufacturing and commercial sectors
- Review the scope and stringency of BASIX (for energy and water efficiency)<sup>45</sup>

It is unfortunate that these two targets were removed from the Draft Sydney Metro Strategy (2013), which relied on existing BASIX targets for housing, and the National Australian Build Environment Rating System (**NABERS**) for commercial building disclosure.<sup>46</sup> Notably, 'The impact of climate change on residential and commercial buildings is described by Garnaut (2008a) as being medium to high risk.'<sup>47</sup> As the Draft Strategy proposed significant increases in *growth targets* for residential and commercial buildings, these should be matched with targets to expand BASIX to additional sites, to aid climate change mitigation and adaptation.

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<sup>40</sup> (24% and 31% respectively). See NSW Government, *Sydney over the next 20 years – A Discussion Paper* (Discussion Paper), p 24.

<sup>41</sup> Approximation based on 2 million tons of GHG emissions saved by BASIX over 9 years (2004-13), and taking 64 million tons (2009-10 figure) as a 'base rate' of emissions over that period (consistent with NSW *State of the Environment 2012* findings that annual NSW emissions have remained relatively steady since 1989-90.) Thorpe and Graham performed a similar calculation in their 2009 article on BASIX, with similar results of 0.4% or less.

<sup>42</sup> See Department of Planning & Infrastructure, Draft Sydney Metro Strategy Discussion Paper submissions summary, [www.planning.nsw.gov.au/sydney-over-the-next-20-years](http://www.planning.nsw.gov.au/sydney-over-the-next-20-years).

<sup>43</sup> See NSW Office of Environment and Heritage, <http://www.environment.nsw.gov.au/sustainbus/eua.htm>.

<sup>44</sup> NSW Government, *NSW 2021 State Plan* (2011), at [www.2021.nsw.gov.au](http://www.2021.nsw.gov.au). See targets to goals 23 and 22.

<sup>45</sup> NSW Government (2010), *Metropolitan Plan for Sydney 2036*, 'Overview', p 6.

<sup>46</sup> NSW Department of Planning and Infrastructure, *Draft Sydney Metro Strategy* (2013). NABERS is an inter-government initiative for commercial buildings, coordinated by the NSW Office of Environment and Heritage ([www.nabers.gov.au](http://www.nabers.gov.au)). See also the Commonwealth Commercial Building Disclosure Program ([www.cbd.gov.au](http://www.cbd.gov.au)).

<sup>47</sup> Australian Government, *Our Cities – The challenge of change* (2010), p 71.

**Recommendation:** *The Draft Sydney Metro Strategy should be updated to support expanded BASIX targets and reporting for residential, commercial and industrial buildings.*

### **BASIX SEPP should permit higher sustainability standards in local precincts**

EDO NSW remains concerned that the BASIX targets place a 'ceiling' on mandatory energy and water efficiency standards in all residential circumstances. In particular, the BASIX SEPP invalidates the provisions of any environmental planning instrument or development control plan that aims to reduce consumption of mains water, reduce greenhouse gas emissions or improve the thermal performance of a building to which BASIX commitments apply.<sup>48</sup> While the initial intent may have been to promote consistency and avoid lesser standards, this also restricts *higher* targets that councils could negotiate at a 'precinct' scale.

It is particularly problematic that BASIX prevents consent authorities from imposing stronger standards given that the targets have not been updated since 2006. Building sustainability codes must be continually updated to reflect changes in technology and best practice sustainability. They should also leave room for the adoption of more stringent standards by local authorities at an appropriate scale. Failure to do so may result in rigid policies that hinder, rather than facilitate, optimal sustainability and environmental outcomes.<sup>49</sup>

**Recommendation:** *In addition to more regular target reviews, the BASIX SEPP should be amended to permit local councils to set higher sustainability targets than BASIX at the precinct-level. This is particularly relevant given the recent proposals for specific, localised 'development codes'.*

### **Consider broadening BASIX or similar schemes for new sustainability measures**

After nearly 10 years of operation, serious consideration should be given to expanding BASIX not only by sector, but also by additional measures of sustainability. This is an important next step in NSW. This could be assisted through an intergovernmental taskforce that fosters more consistent, and leading practice, sustainable built design across Australia.

While overseas schemes operate differently to BASIX and are adapted to local conditions, initiatives like the UK *Code for Sustainable Homes* and the US *Leadership in Energy and Environmental Design (version 4)*<sup>50</sup> demonstrate that building sustainability in NSW and Australia can progress beyond the energy/water dichotomy characterised by BASIX.

For example, the NSW Government has made waste disposal an environmental priority. Construction industry waste is a major contributor to landfill, and a significant source of embodied energy and greenhouse emissions. BASIX standards that target lifecycle emissions, waste minimisation and recycled materials would be a positive step. Similarly, the growing economic and environmental attraction to solar energy could be fostered through building and planning regulations that promote improved solar access for energy generation.

#### **UK Code for Sustainable Homes (CSH)**

All homes sold in the UK are required to obtain a CSH rating or disclose that they have not satisfied the minimum requirements of the code. The CSH covers nine categories of sustainable design: Energy and CO<sub>2</sub> emissions, Water, Materials, Surface Water Run-off,

<sup>48</sup> *State Environmental Planning Policy (Building Sustainability Index – BASIX) 2004*, cl 7-9.

<sup>49</sup> See, for example, A. Thorpe and K. Graham, 'Green Buildings – are Codes, Standards and Targets Sufficient Drivers of Sustainability in New South Wales?' (2009) 26 *Environmental and Planning Law Journal* 486, 489.

<sup>50</sup> We note various criticisms that have been made of LEED v3, for example: V. Quirk, 'Where is LEED Leading Us?...And Should We Follow?' 23 April 2012, *ArchDaily*, at <http://www.archdaily.com/?p=227934>.

Waste, Health and Wellbeing, Pollution, Management and Ecology. Mandatory performance requirements apply to all but the last three.<sup>51</sup> All other performance requirements are flexible.

Categories are weighted (with energy and carbon emissions given the greatest weightings) and there are a number of components eligible to score points within each category.<sup>52</sup> The CSH uses a 1 to 6 star rating system to classify a home's overall sustainability performance. The different levels are made up by achieving the appropriate mandatory minimum standards together with a proportion of the 'flexible' standards.<sup>53</sup> The CSH underwent a number of technical changes in 2010. The most significant changes were a result of the UK Building Regulations incorporating elements of the 2007 version of the CSH,<sup>54</sup> demonstrating the importance of increased stringency in building regulations.

#### US – Leadership in Energy and Environmental Design (LEED) (version 4)

LEED is a voluntary rating system established by the US Green Building Council. Version 4 was released in October 2013.<sup>55</sup> Points can be scored under the categories: *Energy and atmosphere*; *Sustainable sites* (erosion control, landscaping etc); *Indoor environmental quality*; *Water efficiency*; and *Materials and resources* (including waste minimisation).

**Recommendation:** *The NSW Government should investigate expanding BASIX to cover additional sustainability measures, such as lifecycle building material analysis and solar access for energy generation. This could include reviewing schemes such as the UK Code for Sustainable Homes and the US Leadership in Energy and Environmental Design (version 4). NSW could also champion an intergovernmental taskforce to foster more consistent sustainable built design standards across Australia, with a commitment to leading practices, innovation and continual improvement.*

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<sup>51</sup> <http://www.breeam.org/page.jsp?id=86>

<sup>52</sup> A. Thorpe and K. Graham, 'Green Buildings: Are codes, standards and targets sufficient drivers of sustainability in NSW?' (2009) 26 *Environmental and Planning Law Journal* 486, p 495.

<sup>53</sup> UK Government, Introduction to BREEAM and the Code for Sustainable Homes (2012), pp 4-5, at [http://www.islington.gov.uk/publicrecords/library/Environmental-protection/Information/Guidance/2011-2012/\(2012-03-03\)-Introduction\\_to\\_BREEAM\\_and\\_CSH.pdf](http://www.islington.gov.uk/publicrecords/library/Environmental-protection/Information/Guidance/2011-2012/(2012-03-03)-Introduction_to_BREEAM_and_CSH.pdf).

<sup>54</sup> A full list of the technical changes to the 2010 CSH is available here:

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/5977/1766323.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/5977/1766323.pdf)

<sup>55</sup> V4 is currently in beta phase. Certification under version 3 will continue to be available until June 2015. The changes in version 4 include: *Material transparency in life cycle assessment ('LCA')*, *Energy and water metering prerequisites and Integrated design* (to credit developments that bring together all elements of the design team at an early stage in the design process) See:

[http://www.usgbc.org/sites/default/files/LEED%20v4%20User%20Guide\\_Final\\_0.pdf](http://www.usgbc.org/sites/default/files/LEED%20v4%20User%20Guide_Final_0.pdf). See also <http://www.archdaily.com/452760/leed-v4-better-than-the-leeds-that-came-before/>.