

# The igreen and Y Green projects

## Potential benefits from project expansion



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## **Table of Contents**

Introduction .....	2
Program benefits .....	2
Program costs.....	3
Expansion scenarios .....	4
The benefits of scale .....	9
Conclusion .....	10

## Introduction

This report outlines several possible scenarios of an expansion of the *Y Green* and *igreen* programs, and the potential benefits in terms of both skills development for youth and the reduction of greenhouse gas emissions. These programs, created through a partnership between the Dusseldorp Skills Forum and Steplight Pty Ltd. have been operating on a small scale. *Y Green* programs have been run/are running in NSW: Rouse Hill (three programs covering 750 assessments), Lismore/Ballina (one program of 300 assessments) and Western Sydney (one program across five Local Government Areas covering 4,000 assessments). In Victoria, there is one program in Whittlesea covering 300 assessments. Another two or three programs are due to start in the first half of 2010. To date there are *igreen* programs running or scheduled in NSW: Central Coast (four programs covering 400 assessments) and Kellyville (100 assessments); Victoria: Mill Park (100 houses) and Epping (100 houses); Tasmania: Launceston (100 houses) and Hobart (100 houses), as well as potential programs in Adelaide and Qld Sunshine Coast in 2010.

*Y Green* aims to provide skills development, training and recognition for young people aged 15 to 25 years by providing them with training and paid employment to conduct home sustainability assessments and consultations in their local community. The consultations include providing advice and information on household energy and water efficiency and products available to reduce energy and water usage. In addition to improving the efficiency of local residential households, the program also aims to establish work experience and skills development for young participants, in an area of emerging employment opportunities.

*igreen* is an accredited secondary school training program designed to provide students with the technical skills required to undertake a residential sustainability assessment, and practical experience in delivering sustainability assessments within their local community. Each student is required to conduct an environmental sustainability assessment of their own home, plus a minimum of ten other homes within the school community. Basic skills in customer service, first aid and occupational health and safety are also developed. Students provide their clients with advice and information on household energy and water efficiency, in the form of an Energy & Water Action Plan. Three months later, a review of each home is conducted by the student to determine which actions have been implemented. This also happens in *Y Green* and both programs document the changes.

An online computer program supports the assessors in both the *igreen* and *Y Green* programs in terms of providing specific information on possible sources of energy savings and the provision of expert advice for residents. The software also generates aggregated results, to gauge the success of local initiatives and identify areas still in need of improvement in terms of energy savings and greenhouse gas reductions.

## Program benefits

The *igreen* program is still in its early stages but the *Y Green* program has been reviewed and evaluated by the University of Western Sydney, reporting in September 2009.

The benefits of the *Y Green* program were found to include:

- Increased community engagement amongst youth participants.
- Specific skills development in youth participants.

- Increased knowledge of sustainability issues in youth participants and participating households.
- Fifty-eight per cent of recommended actions were implemented by participating households
- The reviewers broadly estimated that 1,900 kg CO<sub>2</sub>-e was saved per participating household per year.

Some of the benefits of the *igreen* for the participating school and its local community, as identified by the Dusseldorp Skills Forum, include:

- Provides a clear analysis of the school communities' carbon footprint and specifies actions to improve it.
- Develops work related skills in participating students – useful for students' resumes.
- Develops extra qualifications in staff.
- Provides opportunities for students to utilise their green skills for future employment with local government, energy retailers and others.

## Program costs

### Y Green

The costs per local council outlined below are taken from the Dusseldorp Skills Forum *Y Green* Project Manual. Each *Y Green* training program trains 15 youth to assess a total of 300 households (approximately 20 households per youth).

<b>Start up costs (once off)</b>	
TAFE course	variable <sup>1</sup>
Steplight set-up and training	\$6,000
Uniforms & miscellaneous	\$1,000
<b>Total start up costs:</b>	<b>\$7,000 +</b>
<b>Operating costs (per 300 households)</b>	
Steplight home assessments package (\$50 per household) (includes laptops & other equipment; software; operation of website and 1300 telephone number; generation, printing and mailing of household Action Plans; program summary reporting, etc)	\$15,000
Project operator's costs	
<i>Y Green</i> staff costs (\$50 per household)	\$15,000
Review costs (\$10 per household)	\$3,000

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<sup>1</sup> Note: training costs are negotiated on a case-by-case basis with a local training provider.

Project manager costs (25 days)	\$5,000
<b>Total operating costs:</b>	<b>\$38,000</b>
<b>TOTAL COSTS (initial program)</b>	<b>\$45,000 + HSA<sup>2</sup> training costs + TAFE costs</b>

## igreen

The costs per school outlined below are taken from the Dusseldorp Skills Forum *igreen* program overview, and are based on training approximately 20 high school students to assess a minimum of ten households each (the students working in pairs), for a total per school of 100 households. The school absorbs the overhead and teacher salary costs.

Student training through TAFE, RTO or accredited teacher	variable <sup>3</sup>
The <i>igreen</i> Homes Assessor Package (\$50 per household x minimum 100 households)	\$5,000

## Expansion scenarios

The following five possible expansion scenarios for the programs offer an indication of some outputs and outcomes. For the purpose of this modelling it is assumed that energy efficiency would not occur in the households without the programs. Similarly, it is assumed that the household, once alerted to the benefits of energy savings and the reduction of greenhouse gases, would not expand their energy saving opportunities once the program has finished and will continue to maintain the energy efficiencies generated by the program.

### Scenario One

***25% of all local governments in Australia deliver both the Y Green and the igreen programs through one local council and one high school.***

There are approximately 700 local government bodies in Australia<sup>4</sup>, therefore 25% would be 175 local governments.

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<sup>2</sup> Home Sustainability Assessor

<sup>3</sup> See note 1

<sup>4</sup> Australian Local Government Association, 2008, *About ALGA – About local government*, [www.alga.asn.au/about](http://www.alga.asn.au/about)

Total cost to implement one <i>igreen</i> and one <i>Y Green</i> program in 175 local governments (at a cost of \$50,000 + HSA training costs per local government)	\$8,750,000 + HSA training costs
Total number of high school students to receive training and experience in home sustainability assessment through the <i>igreen</i> program	3,500 students
Total number of youth to receive training and paid employment in home sustainability assessment through the <i>Y Green</i> program	2,625 youth
Total number of households to receive a home sustainability assessment (based on 400 households per local government for both programs)	70,000 households
Total estimated greenhouse gas savings (based on 1.9 t CO <sub>2</sub> -e per household per year <sup>5</sup> )	133,000 t CO <sub>2</sub> -e per year

The potential greenhouse gas savings under Scenario One is equivalent to taking 29,555 cars off the road for one year<sup>6</sup>, and permanently, as long as the energy efficiencies are maintained beyond 12 months.

## Scenario Two

**50% of all regional local governments in Australia deliver both the *Y Green* and the *igreen* programs through one local council and one high school.**

There are 539 regional/rural local governments in Australia<sup>7</sup>, therefore 50% would be 270 local governments.

Total cost to implement one <i>igreen</i> and one <i>Y Green</i> program in 270 local governments (at a cost of \$50,000 + HSA training costs per local government)	\$13,500,000 + HSA training costs
Total number of high school students to receive training and experience in home sustainability assessment through the <i>igreen</i> program (based on 20 students per local government)	5,400 students
Total number of youth to receive training and paid employment in home sustainability assessment through the <i>Y Green</i> program (based on 15 youth per local government)	4,050 youth
Total number of households to receive a home sustainability	108,000

<sup>5</sup> This figure is taken from the Steplight Community Snapshot Report of the *Y Green* Pilot program in Kellyville/Beaumont Hills, and is based on the full fuel cycle emissions factors for NSW natural gas and electricity. As such it is an estimate only, and actual GHG savings will vary from household to household, and from state to state.

<sup>6</sup> Based on 4.5 t CO<sub>2</sub>-e per vehicle, taken from Department of Energy, Utilities and Sustainability, no date, *Section 1: Information needed to use the toolbox*, NSW Government, [www.energysmart.com.au/sedatoolbox/esm1.asp](http://www.energysmart.com.au/sedatoolbox/esm1.asp)

<sup>7</sup> Australian Local Government Association, 2008, *About ALGA – About local government*, [www.alga.asn.au/about](http://www.alga.asn.au/about)

assessment (based on 400 households per local government)	households
Total estimated greenhouse gas savings (based on 1.9 t CO <sub>2</sub> -e per household per year <sup>8</sup> )	205,200 t CO <sub>2</sub> -e per year

The potential GHG savings are equivalent to taking 45,600 cars off the road<sup>9</sup>.

The authors of this report suggest that the value of these programs is likely to be higher in rural and regional communities than in the larger cities. This is for a number of reasons. The impact of climate change is likely to be more severe in rural Australia, due to factors such as drought and longer travel distances with impacts on the costs of food and services. Additionally, information about climate change is generally less available in rural areas and fewer programs of assistance target rural areas. As rural areas tend to be characterised by higher levels of participation and mutual support than urban areas<sup>10</sup>, there is a greater likelihood that these programs undertaken in rural areas will gain impetus and be maintained, more than those in an urban setting. Additional benefits for regional governments, in summary, include:

- The provision of a clear starting point for local governments wanting to engage their local community
- The provision of skills and work experience for regional youth
- The provision of a clear community development opportunity for rural areas.

## Scenario Three

### ***25% of all high schools deliver the iGreen program.***

In this scenario, only government run high schools<sup>11</sup> are included.

In remote areas of Australia, schools often cater for a broader age group of students, with one school servicing all children from kindergarten to their final years of school. Given the small size and remoteness of the local communities and the small number of students in the appropriate age bracket, these schools have been omitted from the calculations in this report.

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<sup>8</sup> See note 5

<sup>9</sup> See note 6

<sup>10</sup> Onyx, J. & Bullen, P., 2000, Measuring social capital in five communities, *Journal of Applied Behavioural Science*, 36, 23-42.

<sup>11</sup> Note: the term 'high school' is used generically in this report to refer to all education facilities catering for students in the 14-17 years age bracket targeted by the *iGreen* program.

**Total number of government high schools nationally:**

ACT <sup>12, 13</sup>	High schools (years 7-10)	17
	Colleges (years 11-12)	9
New South Wales <sup>14</sup>	Secondary schools – general	399
Northern Territory <sup>15, 16</sup>	High schools	6
	Senior colleges	2
Queensland <sup>17</sup>	Secondary schools	262
South Australia <sup>18</sup>	Secondary education	81
	Primary/secondary combined	70
Tasmania <sup>19</sup>	Secondary schools	31
	Colleges	8
Victoria <sup>20</sup>	Schools - secondary	402
Western Australia <sup>21</sup>	Senior high schools (years 8-12)	79
	Senior colleges	9
	High schools	9
	<b>TOTAL NUMBER OF HIGH SCHOOLS:</b>	<b>1,384</b>

There are 1,384 government run high schools nationally, therefore 25% would be 346 high schools.

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<sup>12</sup> ACT Department of Education & Training, 2009, *High Schools (Public)*, [www.det.act.gov.au/school\\_education/directory\\_of\\_schools/high\\_schools\\_act\\_government](http://www.det.act.gov.au/school_education/directory_of_schools/high_schools_act_government)

<sup>13</sup> ACT Department of Education & Training, 2009, *Colleges Y11-12 (Public)*, [www.det.act.gov.au/school\\_education/directory\\_of\\_schools/colleges\\_yrs\\_11-12\\_act\\_government](http://www.det.act.gov.au/school_education/directory_of_schools/colleges_yrs_11-12_act_government)

<sup>14</sup> NSW Department of Education & Training, 2007, *Going to a Public School*, [www.schools.nsw.edu.au/schoolfind/locator/?do=sub\\_advanceSearch](http://www.schools.nsw.edu.au/schoolfind/locator/?do=sub_advanceSearch)

<sup>15</sup> Due to the geographical remoteness of many NT townships, community education centres provide education for students from preschool to year 12. These have not been included in this report.

<sup>16</sup> NT Department of Education & Training, no date, *Education & Training Directory*, <http://directory.ntschoools.net/SchoolSearch.aspx>

<sup>17</sup> QLD Department of Education & Training, 2006, *Education Phone Directory* (search results for 'secondary schools'), <http://education.qld.gov.au/directory/phone/index.html>

<sup>18</sup> Department of Education & Children's Services, no date, *Search sites and locations – advanced* (search results for 'secondary education' and 'primary/secondary combined'), [www.decs.sa.gov.au/locs/](http://www.decs.sa.gov.au/locs/)

<sup>19</sup> Department of Education, 2009, *Find a School* (search results for 'secondary' and 'college'), [www.education.tas.gov.au/dept/about2/contact/findaschool](http://www.education.tas.gov.au/dept/about2/contact/findaschool)

<sup>20</sup> Department of Education & Early Childhood Development, 2009, *Find a service or school*, [www.education.vic.gov.au/findaservice/SearchResult.aspx?SearchType=Text&Replace=Y&Type=3%2c2](http://www.education.vic.gov.au/findaservice/SearchResult.aspx?SearchType=Text&Replace=Y&Type=3%2c2)

<sup>21</sup> Department of Education, no date, *Schools online*, <http://www2.eddept.wa.edu.au/schoolprofile/home.do>

Total cost to implement one <i>igreen</i> program in 346 high schools (at a cost of \$5,000 + HSA training costs per school)	\$1,730,000 + HSA training costs
Total number of high school students to receive training and experience in home sustainability assessment through the <i>igreen</i> program (based on 20 students per school)	6,920 students
Total number of households to receive a home sustainability assessment (based on 100 households per school)	34,600 households
Total estimated greenhouse gas savings (based on 1.9 t CO <sub>2</sub> -e per household per year <sup>22</sup> )	65,740 t CO <sub>2</sub> -e per year

The potential GHG savings are equivalent to taking 14,609 cars off the road<sup>23</sup>.

## Scenario 4

### ***50% of LGAs deliver one Y Green and two igreen programs***

Total cost to implement two <i>igreen</i> and one <i>Y Green</i> program in 350 local governments (at a cost of \$55,000 + HSA training costs per local government)	\$19,250,000 + HSA training costs
Total number of high school students to receive training and experience in home sustainability assessment through the <i>igreen</i> program	14,000 students
Total number of youth to receive training and paid employment in home sustainability assessment through the <i>Y Green</i> program	5,250 youth
Total number of households to receive a home sustainability assessment (based on 500 households per local government for both programs)	175,000 households
Total estimated greenhouse gas savings (based on 1.9 t CO <sub>2</sub> -e per household per year <sup>24</sup> )	332,500 t CO <sub>2</sub> -e per year

The potential GHG savings are equivalent to taking 73,888 cars off the road<sup>25</sup>.

## Scenario 5

### ***An average of one Y Green and one igreen program per LGA***

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<sup>22</sup> See note 5

<sup>23</sup> See note 6

<sup>24</sup> See note 5

<sup>25</sup> See note 6

Total cost to implement one <i>igreen</i> and one <i>Y Green</i> program in 700 local governments (at a cost of \$50,000 + HSA training costs per local government)	\$35,000,000 + HSA training costs
Total number of high school students to receive training and experience in home sustainability assessment through the <i>igreen</i> program	14,000 students
Total number of youth to receive training and paid employment in home sustainability assessment through the <i>Y Green</i> program	10,500 youth
Total number of households to receive a home sustainability assessment (based on 400 households per local government for both programs)	280,000 households
Total estimated greenhouse gas savings (based on 1.9 t CO <sub>2</sub> -e per household per year <sup>26</sup> )	532,000 t CO <sub>2</sub> -e per year

The potential GHG savings are equivalent to taking 118,222 cars off the road<sup>27</sup>.

## The benefits of scale

The benefits of rolling the *Y Green* and *igreen* programs out on a large scale are numerous. A program that is well-funded and structured will generate more wide-spread benefits than a piecemeal approach, and should typically be more efficient and more cost-effective.

Although the scenarios above are based on a wide geographic spread of programs, greater benefits should be obtained from the delivery of a number of programs within the same local community. This is likely to facilitate the provision of longer-term job opportunities for those who have undertaken the training. There may also be benefits associated with increased community awareness and support. This would make the recruitment of new households easier, and generate support for the ongoing maintenance of energy savings and creating opportunities for further increasing energy efficiency and reducing GHG emissions within the local community.

A small modification of the program may improve the chances of the program continuing and possibly expanding once the initial project has been completed. It may be possible to enlist a 'champion' from the community who is given the task of facilitating the program on a more on-going basis, through maintaining community engagement and perhaps the local procurement of resources.

For the local government, the process of rolling out the program to additional households would be streamlined, with a reduction in the cost per household and the added benefit of staff who are knowledgeable about the program.

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<sup>26</sup> See note 5

<sup>27</sup> See note 6

## Conclusion

The scenarios detailed above clearly identify the significant benefits afforded by rolling out the *Y Green* and *igreen* programs nationally, in terms of greenhouse gas savings, 'green' skills for young people, and community building in local communities. Although the costs in each scenario are not inconsequential, these are likely to be reduced with a subsequent delivery of the program within the same community, with the additional opportunities this provides for community building and the possibility of the establishment of longer-term employment for young assessors. The programs have the potential for expansion. This is in terms of a wider range of targets for greenhouse gas reduction, such as in relation to transport or recycling of products. The delivery models for the programs could also be facilitated by entities such as energy utilities, other state or federal government departments, or business.

There are strong indications of the future need for skills in green industries, with a projected growth of 230,000 to 340,000 new jobs<sup>28</sup>. While there is some debate as to whether this will be job growth or largely job replacement, the reality is that new skills will be needed and work experience for youth in this area would place them in a more competitive position to access work in the green economy.

There is an urgent need to reduce greenhouse gases to avoid catastrophic climate change. Australia has a poor record with this, having the highest per capita output than any other developed country<sup>29</sup>. Especially with the delay in the introduction of an effective National Carbon Trading Scheme, schemes such as the *Y Green* and *igreen* programs are urgently needed to assist Australian citizens to respond themselves. Significant adaptation now appears to be unavoidable. Again, programs such as these which educate, empower, engage and involve individuals at the same time as building community strengths and responses, must be provided at a national scale as is the case with similar schemes in UK and many European countries.

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<sup>28</sup> Hatfield-Dodds, S., Turner, G., Schandl, H., & Doss, T. 2008, Growing the green collar economy: skills and labour challenges in reducing our greenhouse emissions and national environmental footprint, Report to the Dusseldorp Skills Forum, CSIRO, Canberra, June

<sup>29</sup> Hamilton, C & Turton, C., 1999, Population policy and environmental degradation: Sources and trends in greenhouse gas emissions, *People and Place*, Vol 7, No.4, pp.42-62.