



RENEWABLE NEWSTEAD

NEWSTEAD 2021 ... Supporting the development of a
vibrant, informed & sustainable community

2018 Sustainable Communities National Summit Don
Culvenor
Sept 19, 2018



About Newstead

- Primary School
- Rural Transaction Centre and Community Bank agency, library, laundry, internet access & op shop
- Two pubs
- Milkbar
- Café
- Supermarket
- Butcher
- Mechanic
- Environmental (tree) Management company
- Native plant Nursery
- Unknown number of home businesses, from builders to organisational consultants
- Volunteer-managed swimming pool
- Art exhibition space





About our community

- 15 mins from Castlemaine (& train line to Bendigo & Melbourne)
- Close to schools – Steiner, local primary & secondary schools in Castlemaine, Maryborough & Bendigo
- Population 754 (Source: Census 2016)
- 310 houses
- Biggest age group 60-64 yrs (10.9%) Smallest age groups 25-29 yrs & 80-84 yrs (each @ 3.2%)
- 300 people employed 50.3% FT, 41% PT
- Little cultural diversity – 82.6% of residents born in Australia
- Internet accessed at home 81.4%, no internet at home 17%

- IRSAD (INDEX OF RELATIVE SOCIO-ECONOMIC ADVANTAGE AND DISADVANTAGE) SCORE ... 927

Slide 3

GB3 Geoff, a background map showing where Newstead is might be good here
Genevieve Barlow, 2/05/2018

Shaping our future

- Community summit held May 2008 – run by locals for locals
- To dream about the place we wanted to live in in the year 2021
- Acknowledged our elders & their efforts
- Involved all ages
- Called for ideas
- Kicked off informal groups & projects



We got to work

- Newstead 2021 Inc. formed
- Newstead Community Garden established (2009)
- Newstead playground overhauled & wooden pirate ship installed (2010)
- Energy group established – currently working to switch town to 100% renewable energy on commercially viable basis.
- Rocket Science Community Conversation series started
- Transport group established & community bus funded by Community Bank
- Disability access in main street businesses addressed
- Paths & trails group working on bike/walking paths to nearby towns
- Old railway station restored & opened as Arts Hub (2015)
- Establishment of new Sports Pavilion (2014)
- Developed an exemplar Community Plan (2013)



Newstead 2021 Inc.

- Newstead 2021 has been established to support the development of a vibrant, informed and sustainable community in our town and surrounds.
- The group comprises interested members of the local community who actively and collaboratively work towards this goal.



Slide 6

GB2

Geoff can you please insert the N2021 logo & tagli here somewhere ne

Genevieve Barlow, 2/05/2018

N2021 Inc. – how we work

- Meet only when required (recognises people have jobs & families)
- Acts as a link into our community (handy for councils, departments)
- Gather people for input when needed
- Locals with a shared interest/idea/project often seek funds with N2021 Inc as auspicer
- A community-led organisation that encourages community-led projects
- It's COMMUNITY PROBLEM SOLVING ... OUR MOTTO IS “First, do no harm”



Renewable Newstead: Background

Starting out

- Energy focus developed out of community consultation in 2008
- Formal local group established in 2011
- We started with energy efficiency assessments and local capacity building
- We commissioned a feasibility study that also considered different energy sources. It found that solar was the obvious choice but investment was not yet compelling.

Renewable Newstead: background

The great leap forward

- \$200,000 from Victorian Labor Government for RN to design a model for community-scale renewables announced
- Three-year investigative project from Feb 2015 to July 2018
- Allowed RN to contract an energy specialist and a communications and engagement person

Renewable Newstead: ambition

Transition to 100% renewable energy

Project Goals for Newstead - Victorian town of 500 NMI

- Renewables must be opt in only
- 100 per cent renewable
- Be grid-connected
- Demonstrate new social model for sharing grid costs - ensure all can benefit from solar, not just those with the right roof-space and budget - “do no harm” principle.

Renewable Newstead: ambition

Project Goals beyond Newstead

- Prove a scalable, replicable model for other communities to transition to renewable energy that won't need subsidy once new business norms established
- Prove that renewables can lower bills with no compromise to reliability or power quality
- Mitigate social risk of the solar 'haves' and 'have nots'

Renewable Newstead: early wins

- MOU signed with Powercor to work together
- Detailed options assessment and scenario modelling undertaken
- In 2017, dialogue with Powercor and AER led to an innovative new distribution tariff trial to enable local solar farm and grid sharing at community level.

Renewable Newstead: the tariff

Newstead Residential Tariff Trial commenced July 1, 2018

- Tariff reflects real cost of unconstrained network asset
- \$1/day connection, \$2/kW capacity, \$0c/kWh usage charge - encourages enhanced network utilisation and so lower effective c/kWh rate
- Tariff rewards switching away from wood and gas to electricity
- Savings of 10-25% on the bill appear plausible, with larger energy users likely to benefit most from new network tariff

Renewable Newstead: the model

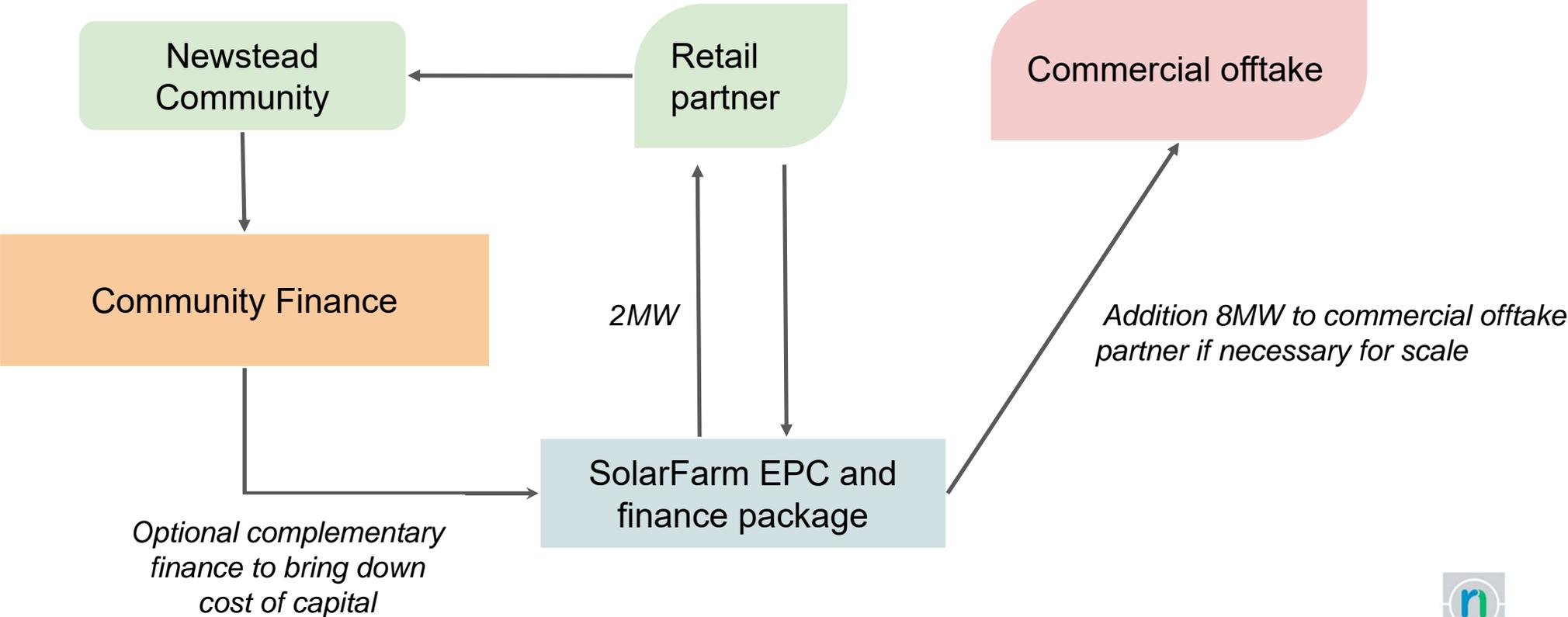
Partner with a gentailer who will build, own and operate a local solar farm of 2-10MW. 2MW needed to supply Newstead

Internalises risk/reward for the retail partner and gives the project the best chance of success

Is lowest cost option

Delivers renewable energy & lower bills to all

Renewable Newstead: the model



Renewable Newstead: the model

Why not rooftop solar?

- Network constraints limit uptake to 500kW, upgrades would be costly
- Higher capex for rooftop solar means higher c/kWh retailer offer under new tariff regime
- A single site solar farm costs less in c/kWh to install
- Before rebates, net cost of 2MW rooftop solar likely to \$4.1m, compares to all-in cost for solar farm under \$2.8m with single axis tracking
- Delivers for all, rather than limited to those who can afford rooftop solar and who have suitable rooftop site

Renewable Newstead: the model

Est capital expenditure (c/kWh) for different energy sources

Bioenergy = 12. Crop waste expensive to collect. Not enough local resource.

Wind = 9.3. Local resource below key threshold of 10m/s.

Rooftop solar = 8

Solar park = 6.3. Fairest for all. Clearly lowest cost option for 100% renewable supply and best fit for project goals.

Renewable Newstead: current status

- Model is finalised & has been presented to our community & government. See www.renewablenewstead.com.au



- Plan to build a shared 2MW solar farm on fringe of town, partner retailer to “build/own/operate”
- Storage integration delayed until storage costs come down - can occur at household or grid scale.

Renewable Newstead: current status

Investment Risk Remains

- Network tariff is a two-year trial, with three-year extension should 50% of customers sign up. Mis-match with 15yr+ renewable investment horizon
- No guarantee of customer sign-up and long-term loyalty: local customers using local solar farm output will be critical to viability
- Policy uncertainty also makes long-term solar farm offtake pricing difficult
- BUT on paper, all project goals can be met...So how do we de-risk investment

Renewable Newstead: moving on

Options in play

- Pursue CAPEX funding support from Government for solar farm
 - When compared to rooftop solar, the 2MW solar farm saves consumers approximately \$850,000 via avoided STC rebates
 - We estimate \$850,000 is sufficient to de-risk investment in 2MW solar farm
 - LGCs can go to zero without affecting project outcomes - solar farm remains viable, customers save on bills.
- Encourage new customer contracts that create long term loyalty incentive - requires establishing new business norms
- Negotiate longer term network tariff trial - will take time

Renewable Newstead: learnings

For communities

Communities can transition to 100% renewable energy, while driving down costs for all customers, not just those with rooftop solar. How?

1. Cost-reflective network pricing leads to enhanced network utilisation and lower effective c/kWh for delivered energy.
2. Network price setting timeframes need to adapt to decentralised renewables.
3. Network tariff innovation (\$0/kWh) puts rooftop solar and front of meter solar farm on equal footing, with least cost renewables investment (front of meter solar farm) resulting in lower c/kWh delivered energy
4. Long-term customer loyalty aligned to local renewable energy asset investment horizon reduces churn costs for renewable gentailers and helps drive down whole of bill costs - contractual models between retailers and customers are key to enabling this outcome

Renewable Newstead: learnings

For the market

1. Network pricing needs to respond to changing energy technology costs and customer expectations, to ensure the grid remains a utilised asset and death spiral risks can be mitigated
2. Network tariff structures and their duration need to better align to renewable energy investment timeframes, to underpin community-scale renewable energy supply, and ultimately decentralised microgrids
3. Retailers need to better align customer contract terms with investment in renewable generation, creating incentives for customer loyalty without creating unfair contract termination clauses
4. Regulators across all jurisdictions can help the market innovate by proactively supporting development of new tariff and contractual models.

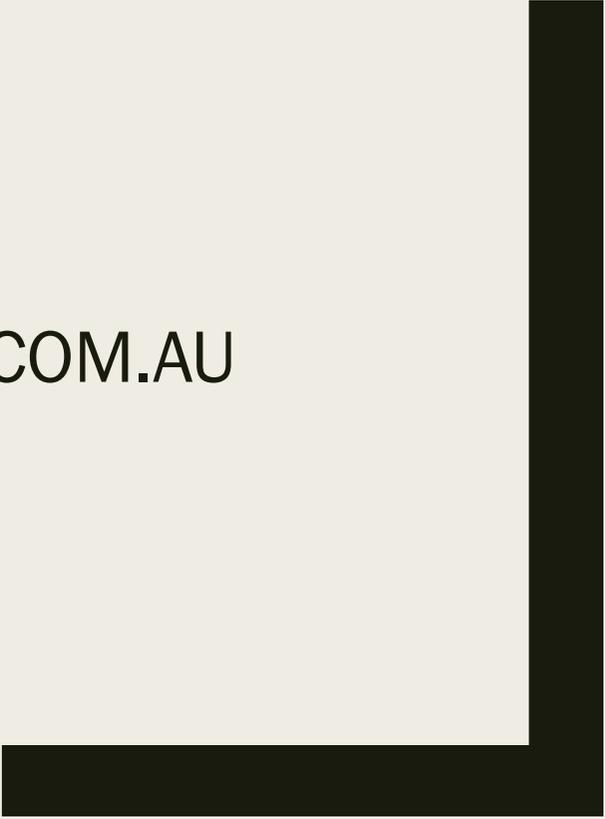
In conclusion

SMALL RURAL COMMUNITIES ...

Can collaborate and innovate to really effectively and efficiently tackle and solve complex problems

... Need trust and commitment from Government and the private sector to succeed.





WWW.RENEWABLENEWSTEAD.COM.AU

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