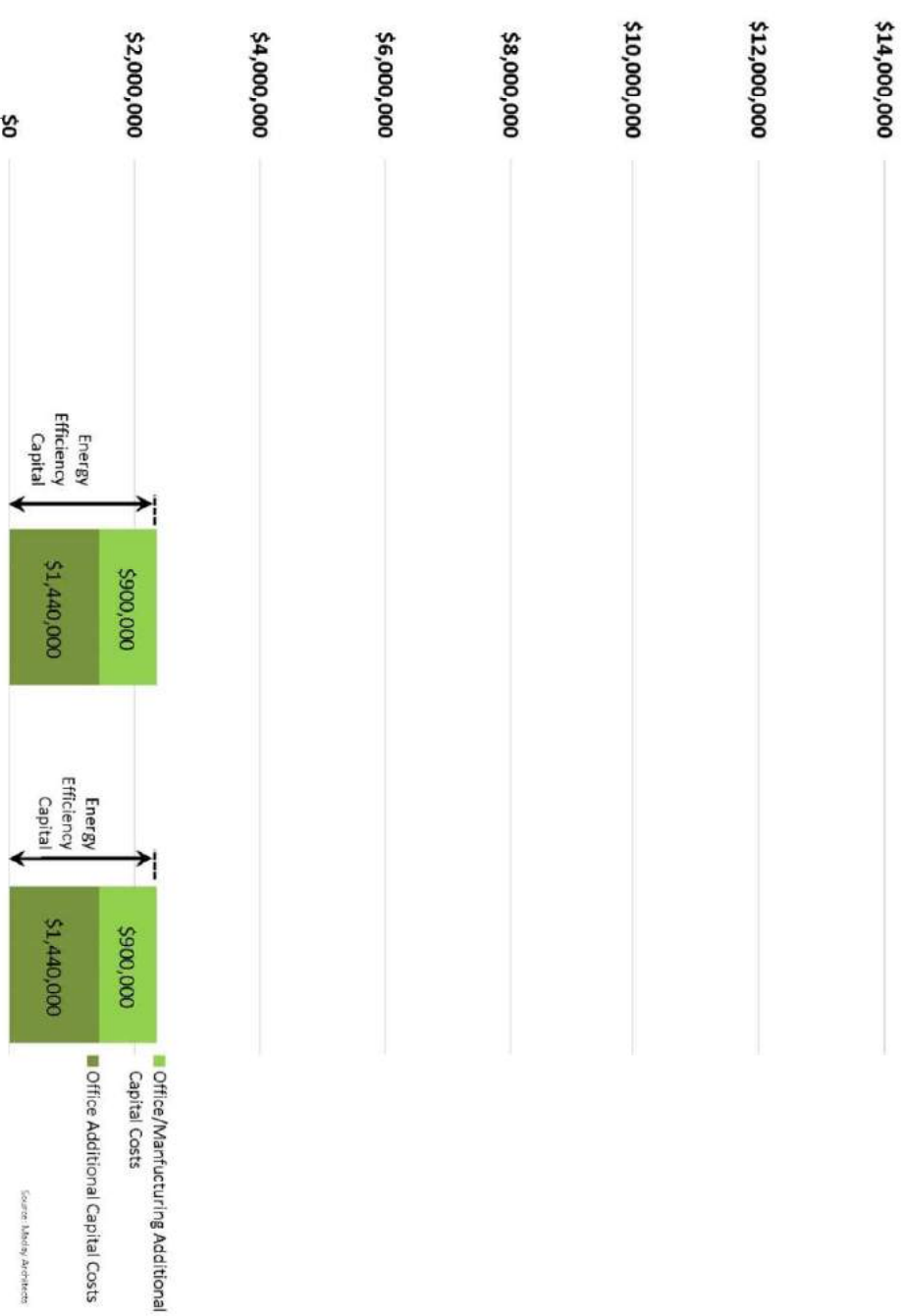


Community

Commercial 20-Year Costs

- Energy efficiency capital costs



CODE

NZR

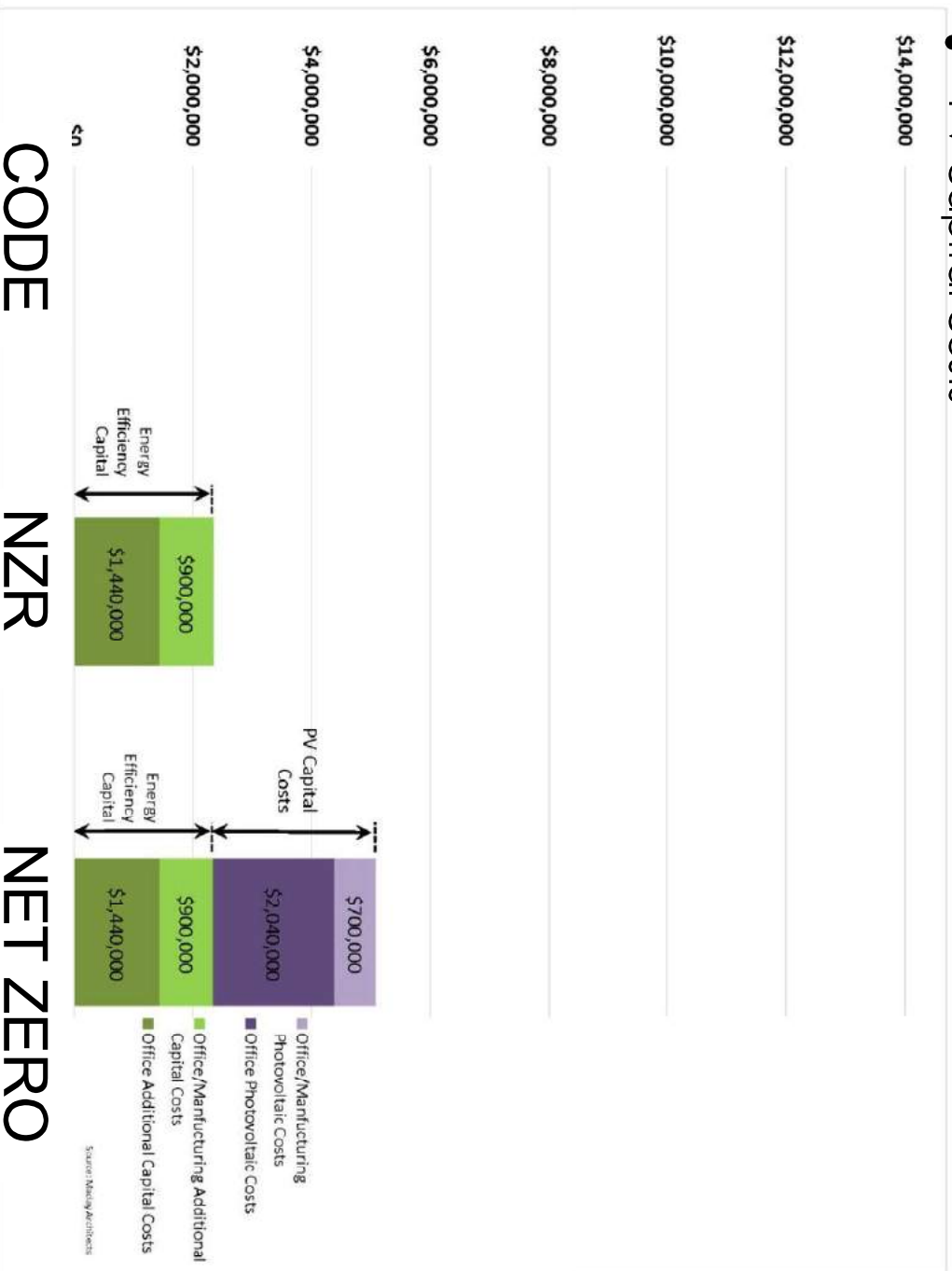
NET ZERO

Source: Liberty Advisors

Community

Commercial 20-Year Costs

- PV capital costs



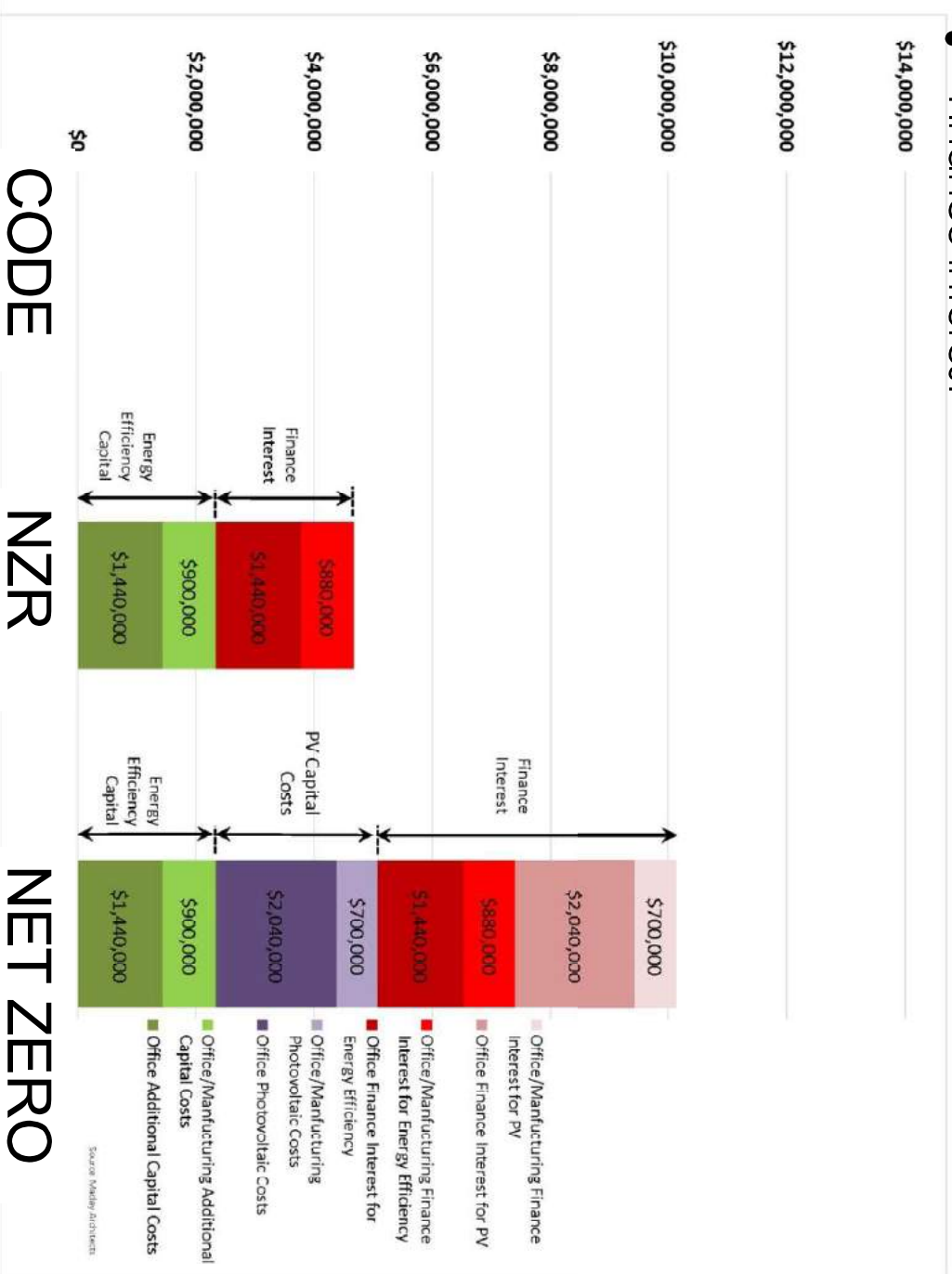
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NZR

NET ZERO

Community Commercial 20-Year Costs

- Finance interest



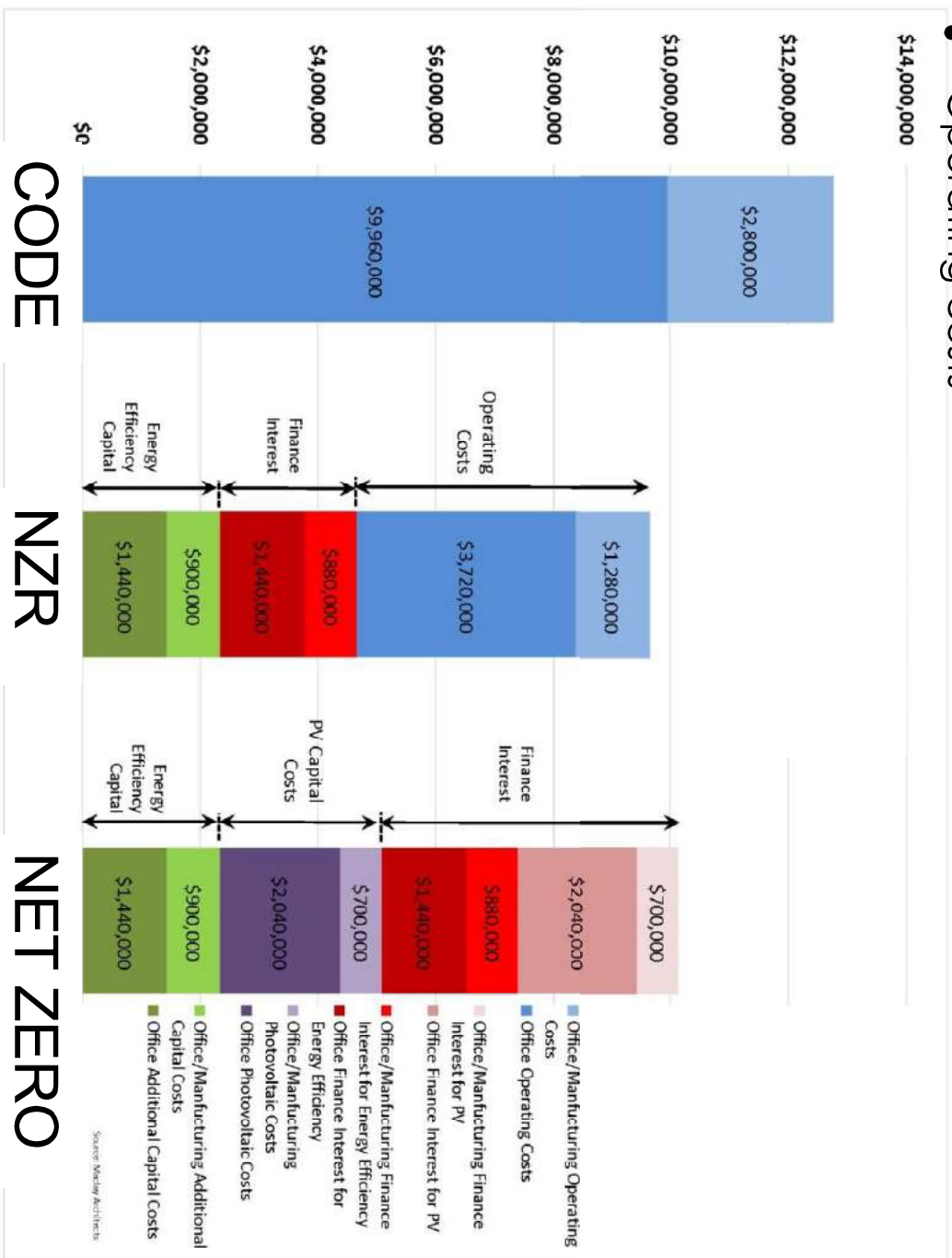
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NZR

NET ZERO

Community Commercial 20-Year Costs

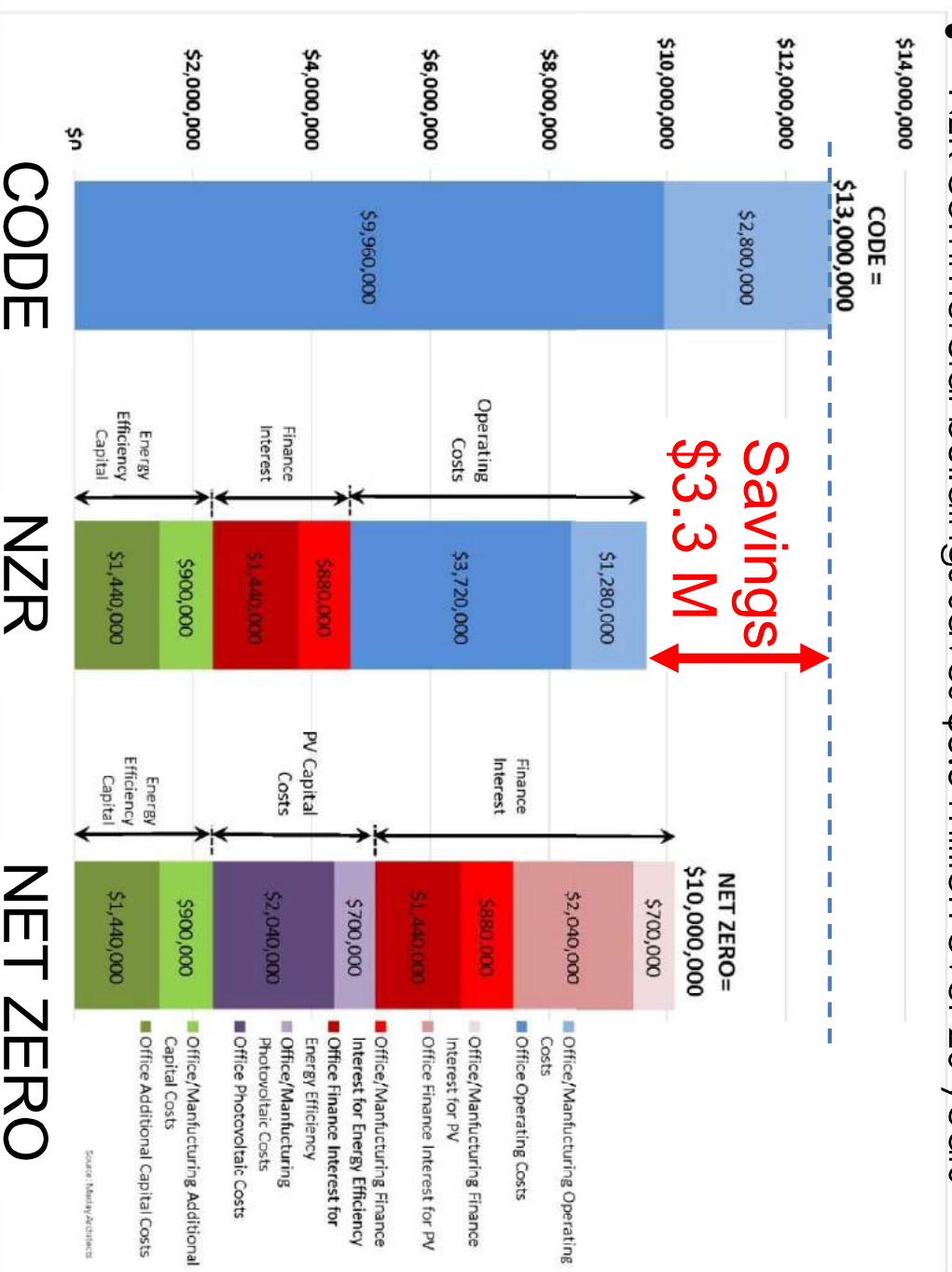
- Operating costs



Community

Commercial 20-Year Costs

- NZR commercial buildings saves \$3.3 million over 20 years



CODE

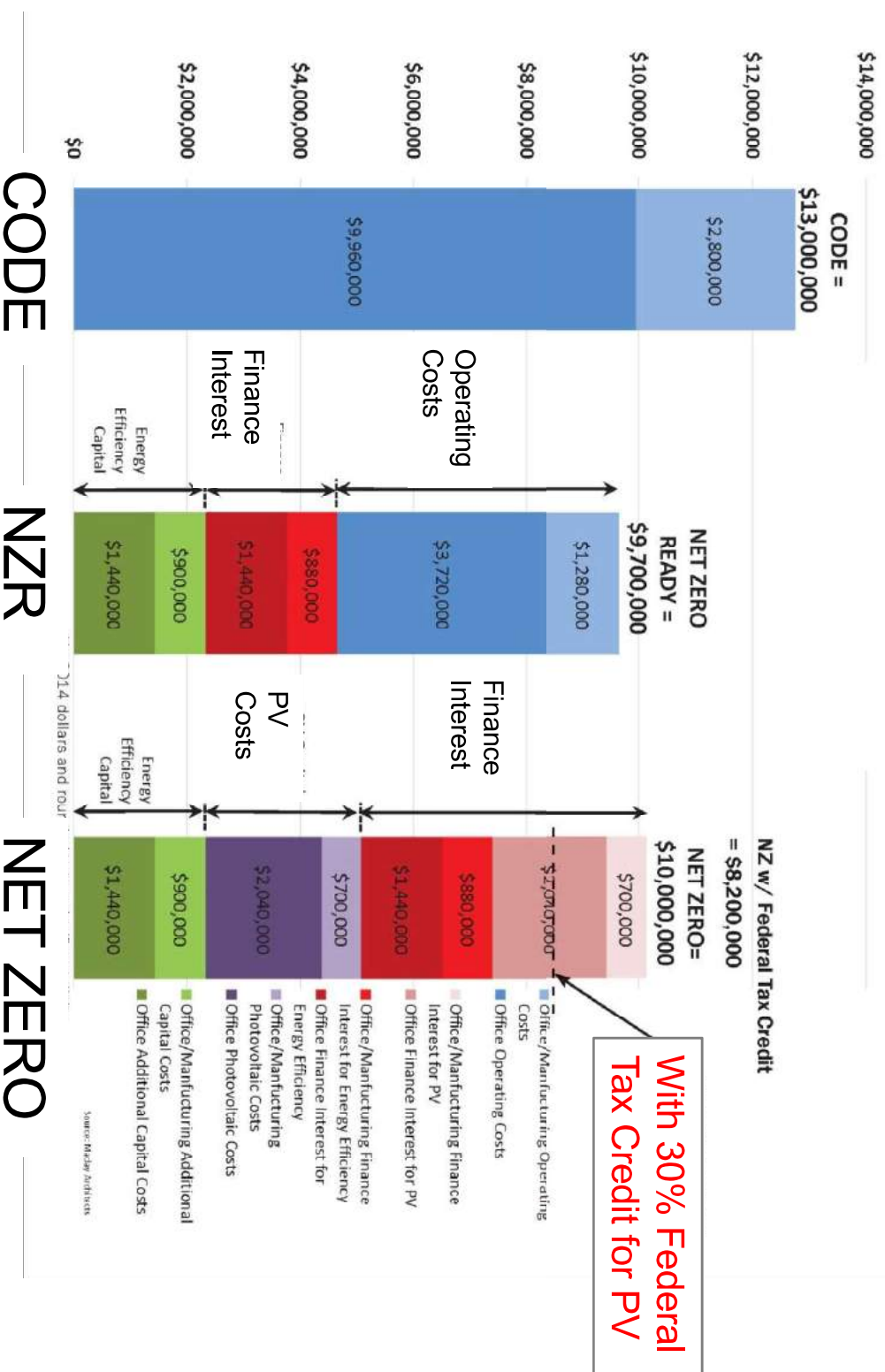
NZR

NET ZERO

Community

Commercial 20-Year Costs

- NZ with the federal tax credit saves \$4.8 million over 20 years



CODE

NZR

NET ZERO

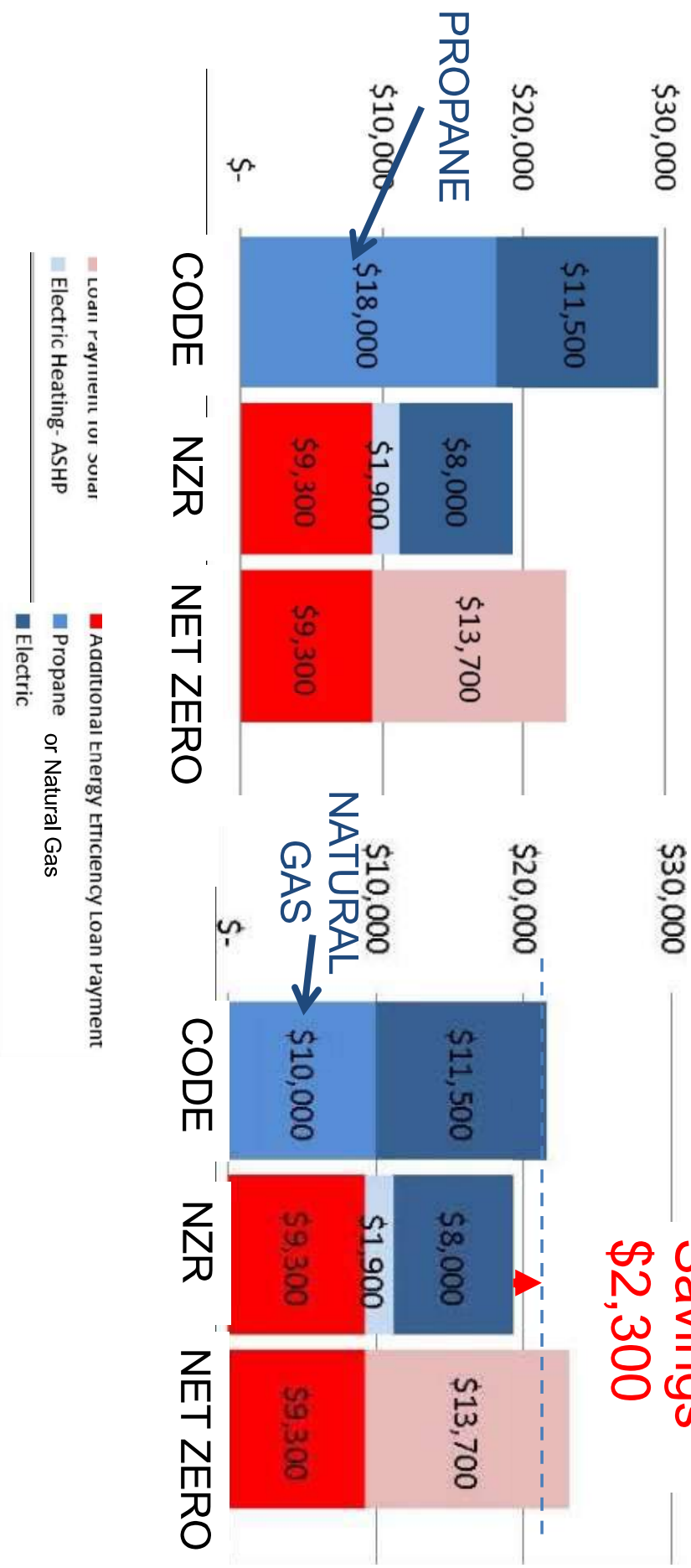
Community

Net Zero saves over \$8 million in 30 years for multiple owners



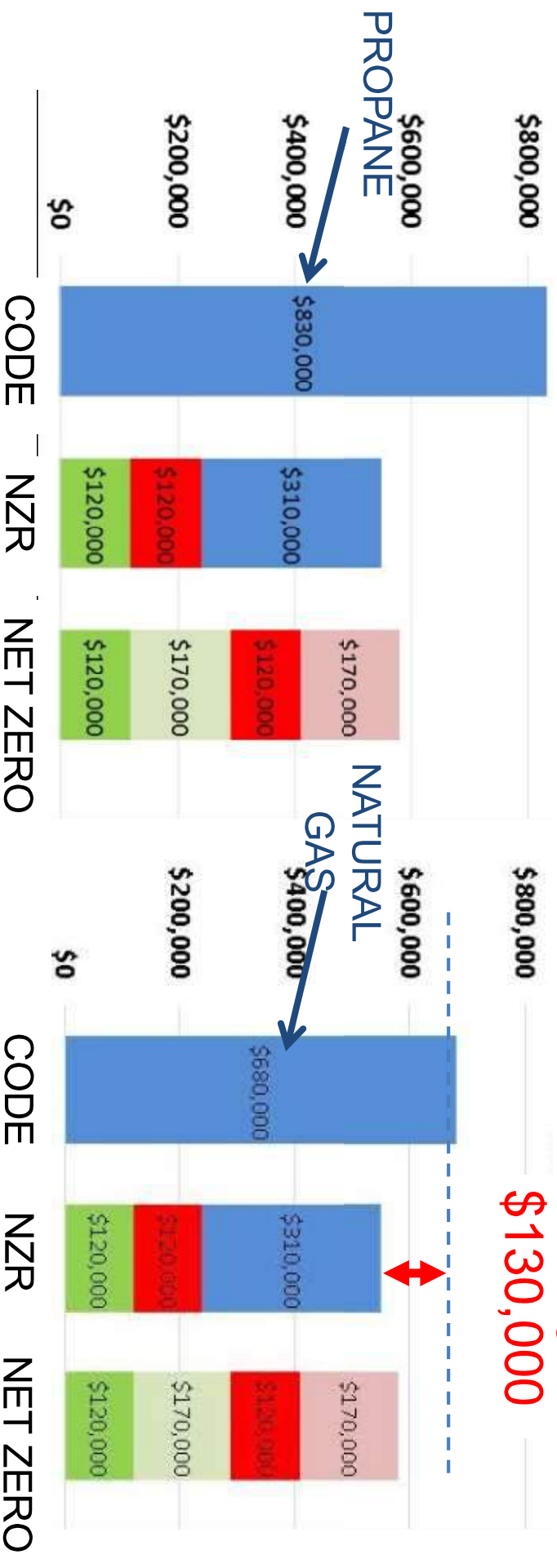
Open Office with Natural Gas

- \$1.43/therm (VT Sept '15 price)
- 1st-year costs

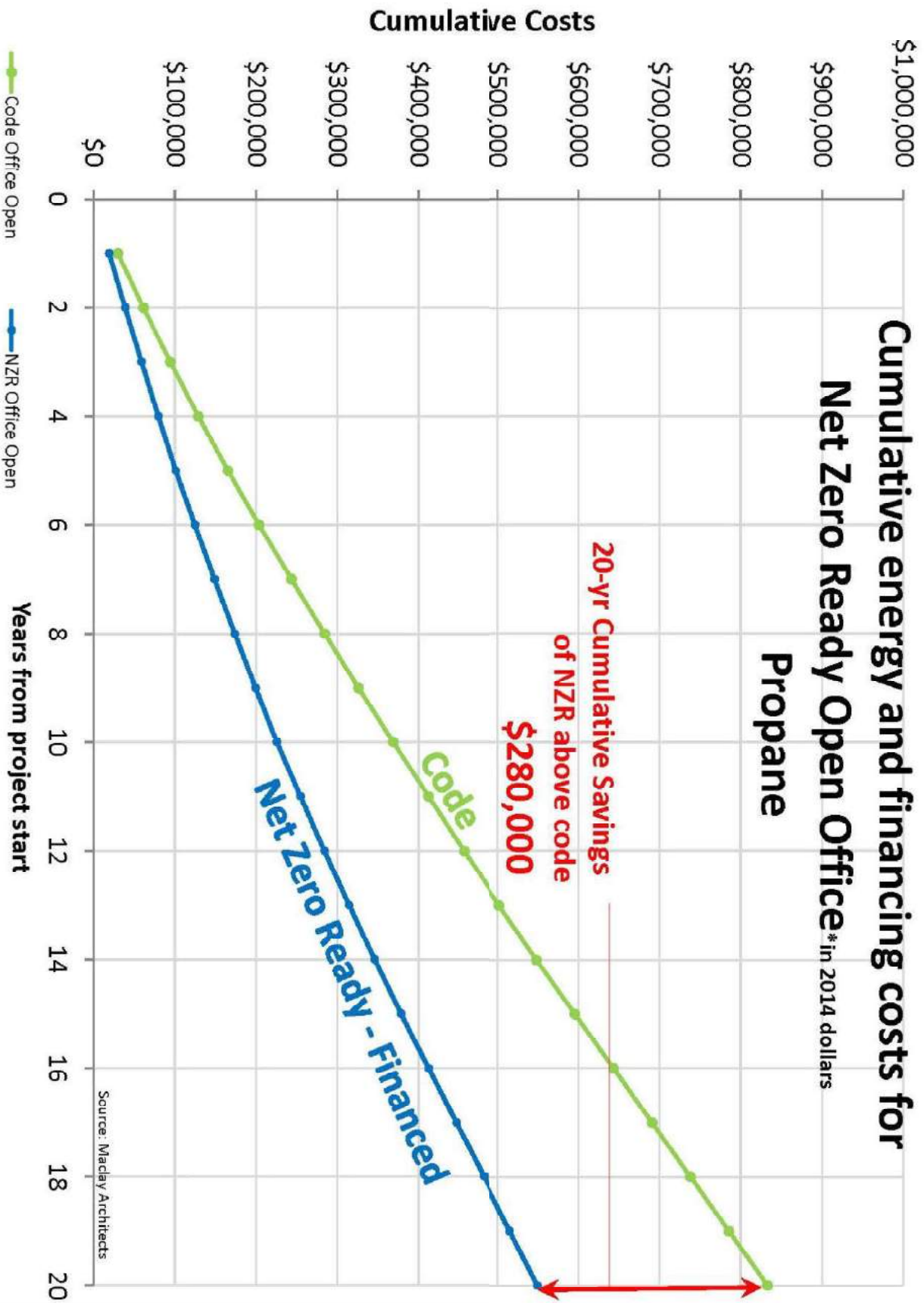


Open Office with Natural Gas

- \$1.43/therm (VT Sept '15 price)
- 20-year costs



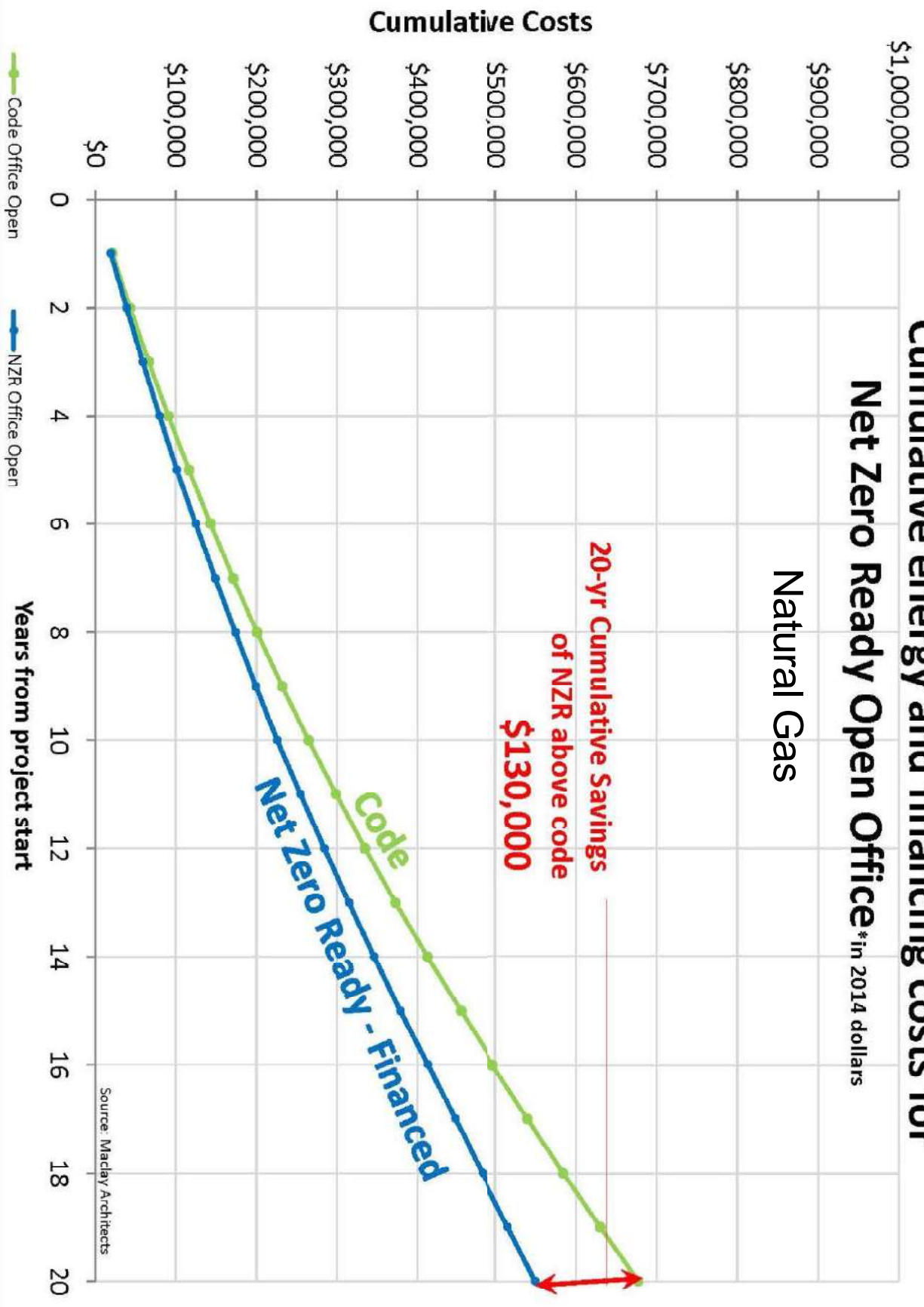
■ Additional Energy Efficiency Capital Costs
 ■ Photovoltaic Capital Costs
■ Finance Interest for Energy Efficiency
 ■ Finance Interest for PV
■ Operating Costs



Cumulative energy and financing costs for

Net Zero Ready Open Office* in 2014 dollars


Natural Gas



Source: Maclay Architects



Overall Lessons

- Reduces operating cost volatility and provides stability
 - Building Type affects costs and ROI
 - Financing options impact ROI
 - Rebates and incentives make a difference
 - Future of Federal Renewable Tax Credits and rebates unknown
 - Appraisals typically do not value NZR construction and renewables
 - Fuel volatility and current low cost of fossil fuels
 - Interest rates likely to rise
- 



Lessons Learned - Residential

- Residential owner occupied buildings are an excellent investment (low 30-yr mortgage rates)
- Cost for ASHP are low and established in the marketplace
- Additional NZR construction is \$13-16 / sf (~10%)



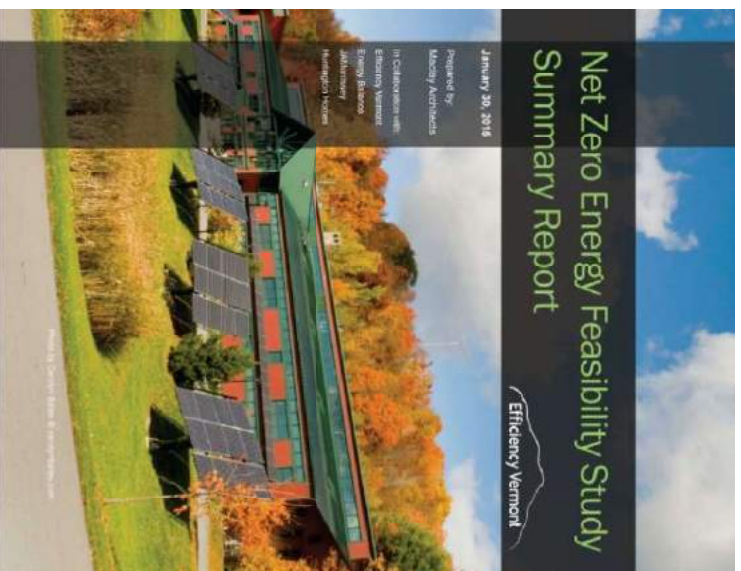


Lessons Learned – Commercial

- NZR offices are a very good investment
- NZR office/manufacturing are cash flow neutral
- Open offices are cheaper to own and operate than closed offices
- In Buildings with AC, there is no additional cost for ASHPs
- Longer term fixed commercial loans with SBA and VEDA improve NZR financial performance
- Additional NZR construction is \$9-\$17 / sf (~10%)



Read / Share the Study



To access the Summary Report and the Full Report visit:

<https://www.encyciencyvermont.com/news-blog/whitepapers/net-zero-energy-feasibility-study>