



The 2030 Challenge Stimulus Plan

Transition Team Brief

Architecture 2030

Project

Because investing in energy efficiency in buildings is the most effective way to create jobs and revive the economy (see **Justification**), Architecture 2030 recommends an investment of \$171.72 billion (\$85.86 billion each year for two years) in the Building Sector to provide a 'housing mortgage interest rate buy-down' and a 'commercial building accelerated-depreciation program' for buildings that meet the energy reduction targets of the widely adopted 2030 Challenge¹. This investment will create **3.75 million direct jobs in the Building Sector, as well as 4.34 million indirect and induced jobs and over 350,000 jobs from consumer spending.**

Of special note, tying the mortgage interest rate buy-down and accelerated depreciation to achieving specific energy reductions immediately creates the opportunity for a \$1.6 trillion renovation market that does not currently exist. The immediacy and magnitude of this opportunity can turn the tide for the construction industry, as well as the nation.

The plan, called the 2030 Challenge Stimulus Plan ('Plan'), would save consumers \$142.33 billion to \$200.88 billion² in energy costs and mortgage payments over a five-year period, significantly reducing the risk of mortgage failure while increasing disposable income. Because the 2030 Challenge calls for buildings to be renovated or designed to reduce their fossil-fuel, GHG-emitting energy consumption from 30% below that required by the IECC 2006 and ASHRAE 90.1-2004 code standards to carbon neutral³, the Plan will also reduce CO₂ emissions by 481.13 MMT and energy consumption by 6.17 QBTu over the same five-year period.

The Plan requires participants to meet the energy reduction targets of the 2030 Challenge. Plan benefits are weighted so as to encourage renovation in the current 'overbuilt' environment; however, the Plan also offers benefits for new buildings that meet the targets to further encourage an immediate and rapid shift to an energy-efficient built environment.

Residential Buildings

The Plan leverages the benefits of energy efficiency by offering for both existing and new homes, through Fannie Mae, Freddie Mac and other GSEs, increased mortgage financing with reduced interest rates in proportion to the energy reduction target reached:

- A. Those seeking to purchase an existing home or refinance their mortgage (including to avoid foreclosure) would be required to renovate the home to meet one of the following energy reduction targets of the 2030 Challenge, depending on the interest rate desired:

| Mortgage Interest Rate* | Efficiency Requirement (Energy Savings) ⁴ |
|-------------------------|--|
| 4.0% | 30% below code |
| 3.5% | 50% below code |
| 2.5% | 75% below code |
| 2.0% | Carbon neutral |

* Interest rates to be adjusted based on market conditions.

¹ The 2030 Challenge, issued by Architecture 2030, calls for all new buildings and renovations to be designed so as to reduce their fossil-fuel, GHG-emitting energy consumption by 30% below that required by the latest IECC 2006 and ASHRAE 90.1-2004 code standards, incrementally increasing the reductions to carbon neutral by 2030.

² Depreciation savings was not included in this figure because tax savings from accelerated depreciation is repaid at the time of building sale, which varies greatly.

³ Carbon neutral means any imported energy from a new development or community-scale energy system is not produced from fossil fuels.

⁴ Building energy consumption from non-depletable energy sources collected on site or provided from within a development is considered an energy savings.

B. For those seeking a reduced-rate, 30-year mortgage to purchase a newly constructed home, the new home will be required to meet one of the energy reduction targets of the 2030 Challenge, depending on the interest rate desired:

| Mortgage Interest Rate* | Efficiency Requirement (Energy Savings) |
|--------------------------------|--|
| 4.5% | 30% below code |
| 4.0% | 50% below code |
| 3.0% | 75% below code |
| 2.5% | Carbon neutral |

* Interest rates to be adjusted based on market conditions.

Commercial Buildings

To stimulate sustainable renovation and development in the commercial Building Sector, the Plan calls for accelerated depreciation for property placed into service from 2009 through 2011 as follows:

A. For those seeking to renovate an existing commercial building or commercial building space, the renovated building or space will be required to meet one of the energy reduction targets of the 2030 Challenge, depending on the accelerated depreciation schedule desired:

| Accelerated Depreciation | Efficiency Requirement (Energy Savings) |
|---------------------------------|--|
| 4 years | 30% below code |
| 3 years | 50% below code |
| 2 years | 75% below code |
| 1 year | Carbon neutral |

B. For those seeking to purchase or build a new commercial building, the building will be required to meet one of the energy reduction targets of the 2030 Challenge, depending on the accelerated depreciation schedule desired:

| Accelerated Depreciation | Efficiency Requirement (Energy Savings) |
|---------------------------------|--|
| 8 years | 30% below code |
| 6 years | 50% below code |
| 4 years | 75% below code |
| 2 years | Carbon neutral |

Results

The total number of new jobs created by implementing the 2030 Challenge Stimulus Plan is estimated as follows:

| Building Sector | Indirect & Induced | Consumer Spending (Residential Savings) | Consumer Spending (Commercial Savings) | TOTAL NEW JOBS |
|------------------------|-------------------------------|--|---|-----------------------|
| 3,750,686 | 4,342,336 | 309,374 | 42,616 | 8,445,012 |

NOTE: The total number of new jobs is based on 1.25 million new and 2.1 million refinanced 30-year mortgages and 400 million square feet of new and 900 million square feet of renovated commercial building space in each year.

Because of the effectiveness of energy efficiency, any economic stimulus and job-creation plan should require all Building Sector programs receiving federal funds (e.g. government, education and community facilities) to meet the 2030 Challenge targets.

To support both the residential and commercial segments of the Plan, Architecture 2030 recommends funding State Energy Departments for the specific purpose of compliance training of building inspectors to verify that the buildings meet the efficiency specifications. Other organizations have submitted proposals recommending funding for training. Architecture 2030 supports this and recommends funding of \$2 billion.⁵

Cost

\$171.72 billion (\$85.86 billion each year for two years). The Plan will pay back this cost each year through the new tax base created by the 8.445 million new jobs. In addition, it will save the government the cost of unemployment benefits. Prior to the end of the stimulus period, the number of jobs created, increased tax revenues and strength of the market would be evaluated to determine the timeline for phasing out or terminating the incentives and the need for other funding mechanisms, such as revenues from emissions trading.

How Quickly Spending Can Begin (Between 90 days and 12 months)

Ninety to 180 days. This is how long Architecture 2030 estimates it will take to modify existing federal programs based on the proposed mortgage buy-down rates, depreciation schedules and energy reduction targets.

Number of Jobs Produced

8.445 million (3.75 million direct jobs in the Building Sector, as well as an additional 4.34 million indirect and induced jobs and over 350,000 jobs from consumer spending).

Justification

Numerous studies have shown that investing in energy efficiency in buildings is the most effective way to create American jobs and revitalize the economy. Efficiency can be implemented immediately, creates the most jobs, costs the least and offers great benefits to the planet.⁶ By integrating efficiency requirements with a mortgage buy-down program, we can leverage the effectiveness of efficiency to keep families in their homes and revive the economy.

Building Energy Efficiency

The Building Sector has taken the brunt of the economic downturn with tens of thousands of professionals, builders and laborers out of work. A well-thought-out, strategic investment in this sector would revitalize it, and, due to the large number of products and services involved, spread the investment across the entire US and across all industries (from steel, insulation and caulking to mechanical and electrical equipment, glass, wood, metals, tile, fabrics and paint) and all sectors (from architecture, planning, design, engineering, banking and development to manufacturing, construction, wholesale, retail and distribution).

One of the greatest benefits of the Plan is the potential to create a whole new renovation market for the construction industry. In the first two years alone, building owners renovating their buildings to meet the 2030 Challenge targets will create a renovation market worth over \$153.6 billion.⁷ By 2030, this market could exceed \$1.6 trillion.⁸

⁵ The 8.445 million jobs created by this Plan does not include the jobs that will be created by the \$2 billion investment in compliance training.

⁶ Kershner, K. and Mazria, E., "The 2030 Blueprint: Solving Climate Change Saves Billions," 2030, Inc. / Architecture 2030, <http://www.architecture2030.org/pdfs/2030Blueprint.pdf>.

⁷ For residential, see attached analysis. For commercial, assumes \$5.00 per square foot (2008 Dollars) for commercial building renovation.

⁸ The total amount of the building renovation market over the next 21 years assumes that the same level of renovation intensity will continue after the stimulus period due to improved building codes and incentives to drive additional energy reductions in the building Sector.

Unlike other plans, this plan would also move the US toward significant energy and emissions reductions. The Building Sector is responsible for almost half of all energy consumption and greenhouse gas (GHG) emissions in the US annually. An investment of \$85.86 billion each year for two years in the Plan would not only create jobs and save consumers money, it would also, over a five-year period, reduce CO₂ emissions by 481.13 MMT and energy consumption by 6.17 QBtu, including 1.83 trillion cu. ft. of natural gas and 83.35 million barrels of oil, thereby addressing climate change and energy independence as well.

A significant benefit of building performance standards, such as IECC and ASHRAE 90.1, is that they do not pick clean-energy technology winners or losers. Any existing or new non-CO₂-emitting technology or planning and design strategy can be employed to meet a standard. This includes everything from increasing neighborhood density, building orientation and color, daylighting, appropriate materials, passive solar heating, and cooling and natural ventilation strategies, to insulation, high-performance glazing, solar hot water heating, photovoltaics, micro-wind turbines, energy management systems, daylighting controls and any other site, development or community-scale clean-energy source or strategy.

30-Year Mortgage Buy-down

Addressing the foreclosure crisis is critical to stabilizing the economy; however, taxpayers are increasingly resistant to 'bailouts', no matter how needed. Integrating a buy-down with efficiency is a much stronger strategy than a buy-down alone, and sends a much more positive message. With an integrated strategy, the administration will be able to focus on a message of job creation, stable homeownership, low costs and real energy and CO₂ reductions. That the program more than pays for itself annually in tax revenue will make the Plan even more palatable to taxpayers.

Conclusion

Requiring participants in the Plan to meet one of the energy reduction targets of the 2030 Challenge takes advantage of the many economic benefits of efficiency, including getting the construction industry back to work and creating new jobs in a wide range of fields, from energy auditors and field inspectors to jobs in the manufacturing and installation of solar equipment, efficient lighting, boilers, hot water heaters and appliances. The limited duration of the Plan will encourage early action and participation, jump-starting the economy.

With a single investment, the U.S. can create jobs, strengthen the US economy, reduce CO₂ emissions and energy consumption, and save consumers billions of dollars. **Investing in the Building Sector is the only investment that can accomplish all of these objectives.**

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