

## GHG Project Case Study

### A Capital Idea: Realizing GHG Returns at Johnson & Johnson

Johnson & Johnson (J&J), a corporation of approximately 250 companies producing well-recognized brands such as Tylenol and Band-Aid, recognizes the environmental implications of its global operations and has taken steps to mitigate these impacts. In 2003, J&J publicly announced a worldwide Climate Friendly Energy Policy, which included a commitment to reduce its total greenhouse gas (GHG) emissions to seven percent below 1990 levels by 2010. J&J subsequently set emission targets for each of its business units and began tracking annual progress towards these goals.

After the first year, despite the aggressive GHG reduction target and a wealth of innovative ideas, GHG emission reduction projects were not moving forward in a sufficient volume or at a pace that would achieve J&J's 2010 goal. Projects were proving difficult to justify financially against competing priorities for capital budget funds, such as regulatory compliance and new product development. Business units, feeling these multiple pressures, lacked the incentives to fund unfamiliar GHG reduction projects. J&J needed a new approach to set a path toward achieving its 2010 goal.

#### Creating Capital Relief

J&J's energy team assumed the task of identifying opportunities to overcome budgeting barriers standing in the way of the company's GHG goals. They recognized the primary obstacle facing proposed GHG reduction projects was an internal rate of return (IRR) that was often not as attractive as expected IRRs for other projects and therefore many efficiency upgrades and clean energy

projects would stall during the funding approval process.

Traditional IRR comparisons, however, often did not incorporate the full value of GHG-reduction projects and did not provide an adequate means of comparing investment options and allocating capital. Most of the proposed GHG reduction projects were relatively low-risk and offered operating cost savings, energy reliability and performance enhancements, significant GHG and other emissions reductions, as well as additional business value or community benefits. Essentially, what was lacking was the flexibility and incentive to pursue clean energy and efficiency upgrades, and the certainty that these investments would not restrict the business units' capital budgeting.

With strong support from J&J's Chief Financial Officer, the group ultimately recommended a capital relief strategy to overcome the barriers standing in the way of GHG reductions. Up to \$40 million would be allocated annually to business units to cover the capital costs for investments in GHG projects, provided projects meet certain criteria such as IRR, with the intention of increasing available funding for large-scale projects (\$500,000 or more).

#### Prioritizing and Approving Projects

There was immediate demand for the capital relief funds—business units submitted approximately 45 proposals during the initial round of allocations. As the program has continued, the volume of proposals submitted has settled into a steady stream of a couple proposals per month and the process has become

routine for business units seeking capital funds for GHG projects.

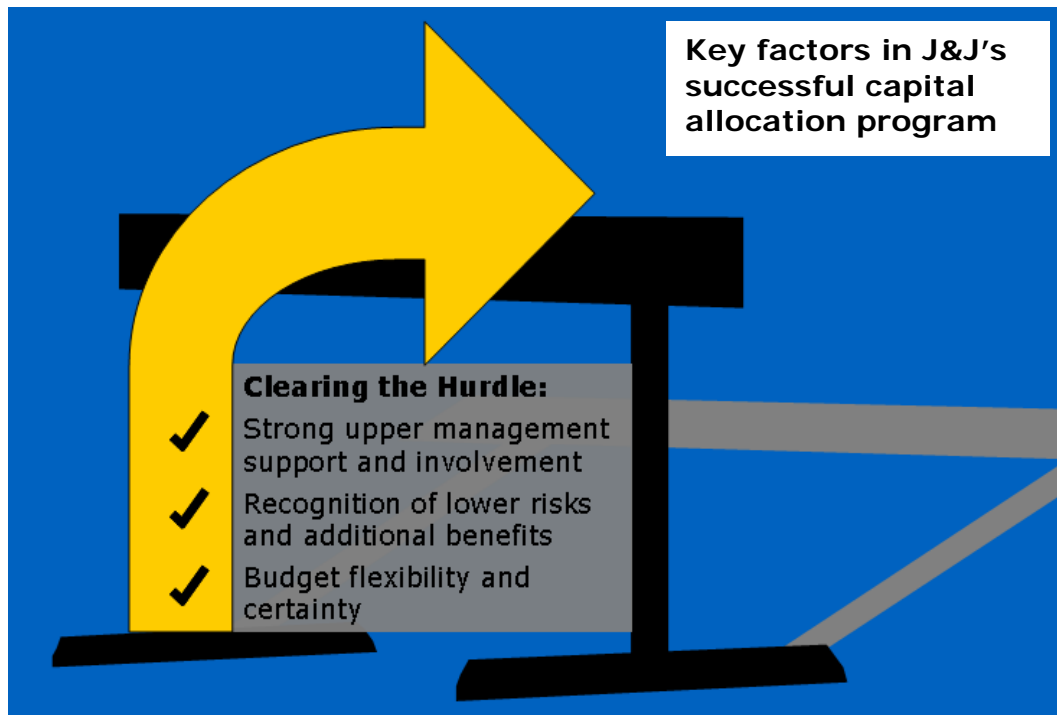
To be approved for capital relief funds, J&J requires a one-page application that provides:

- A brief description of the project
- Projected capital and project expenses
- Expected IRR
- Estimated electricity and/or fuel use savings
- Expected GHG reductions

Applications are reviewed first by the business units and then by a corporate committee with representatives from engineering, finance, and energy management. J&J evaluates proposed projects on the basis of capital per metric ton of CO<sub>2</sub>-equivalent saved, generally requiring the projects demonstrate an after-tax IRR of 15 percent or higher. J&J also encourages project champions to identify external financial incentives (e.g., tax credits or rebates), which are often overlooked but can significantly enhance financial returns.

To provide flexibility, J&J generally approves upgrades with an IRR of 10 percent or higher if they demonstrate additional benefits to the company and its stakeholders. Thus capital relief funds are made available to those facility upgrades that perhaps do not quite reach a 15 percent IRR, but offer substantial GHG reductions or benefits to the business, such as energy reliability and building performance. Solar projects, for example, expecting IRRs of approximately 11-14 percent, have received funding because they help build knowledge in an important emerging technology and support strong community interest in clean energy sources.

The capital relief funds serve to supplement business units' capital budgets and, with project approval from the corporate committee, business units make the final decision on which investments ultimately move forward. Business units manage the projects, determining implementation schedules and allocating funds to meet business needs.



## Reaping the Rewards of Capital Relief

Through 2007, J&J's has allocated approximately \$100 million in capital relief funds to support nearly 50 projects resulting in significant GHG emission reductions. Business units have completed or initiated a variety of innovative clean energy and efficiency upgrades, including a heat recovery upgrade to the heating, ventilation and air conditioning (HVAC) system at one plant that saved more than \$200,000 in the first year and reduces GHG emissions by nearly 4,000 metric tons of CO<sub>2</sub>-equivalent annually (see box).

Overall, these projects have produced an average IRR of more than 16 percent, validating the financial decision to allocate funds to GHG-reducing projects. In all, J&J's approach to capital funding has successfully advanced:

- Four boiler upgrades
- Five HVAC system enhancements
- Six combined heat and power projects
- Eight solar installations
- Thirteen chiller upgrades

- Thirteen other projects (such as landfill gas systems, geothermal heat pumps, lighting and motor upgrades, etc.)

When completed these facility enhancements are projected to reduce GHG emissions by 88,000 metric tons of CO<sub>2</sub>-equivalent per year—equal to the annual GHG emissions from approximately 19,000 cars. These projects represent a significant contribution to an absolute reduction in J&J's global GHG emissions of 16.8 percent compared to 1990 levels, during which time sales have increased some 372 percent.

Designing a survey that was easily navigable and had clearly articulated questions significantly improved the completeness and accuracy of the employee commuting activity data. An added benefit was that employees felt a certain amount of pride at having contributed to the inventory development process. The experience also provided a positive internal communications opportunity.

The Johnson & Johnson Pharmaceutical Research & Development facility in San Diego, California, installed heat exchangers to recover waste heat and enhance the energy efficiency of its HVAC system, saving more than \$200,000 annually and reducing GHG emissions by nearly 4,000 metric tons.

*(Picture courtesy of Johnson & Johnson)*

