

October 01, 2008

**TO: Interested parties**  
**FROM: EEPI work group**  
**SUBJECT: SUMMARY OF THE ENERGY EFFICIENCY AND PRODUCTIVITY INITIATIVE (EEPI) - DRAFT - NOT FOR DISTRIBUTION**

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The Energy Efficiency and Productivity Initiative (EEPI) is a collaborative effort to catalyze mass scale efficiency upgrades and retrofits of existing homes and buildings. EEPI is both an environmental and economic development initiative. EEPI builds off existing Oregon programs and incorporates emerging best practices from around the U.S. It is non-partisan, market driven, and collaborative.

This summary presents a short description of the goals and potential structure of the initiative. Documents with further detail are available.

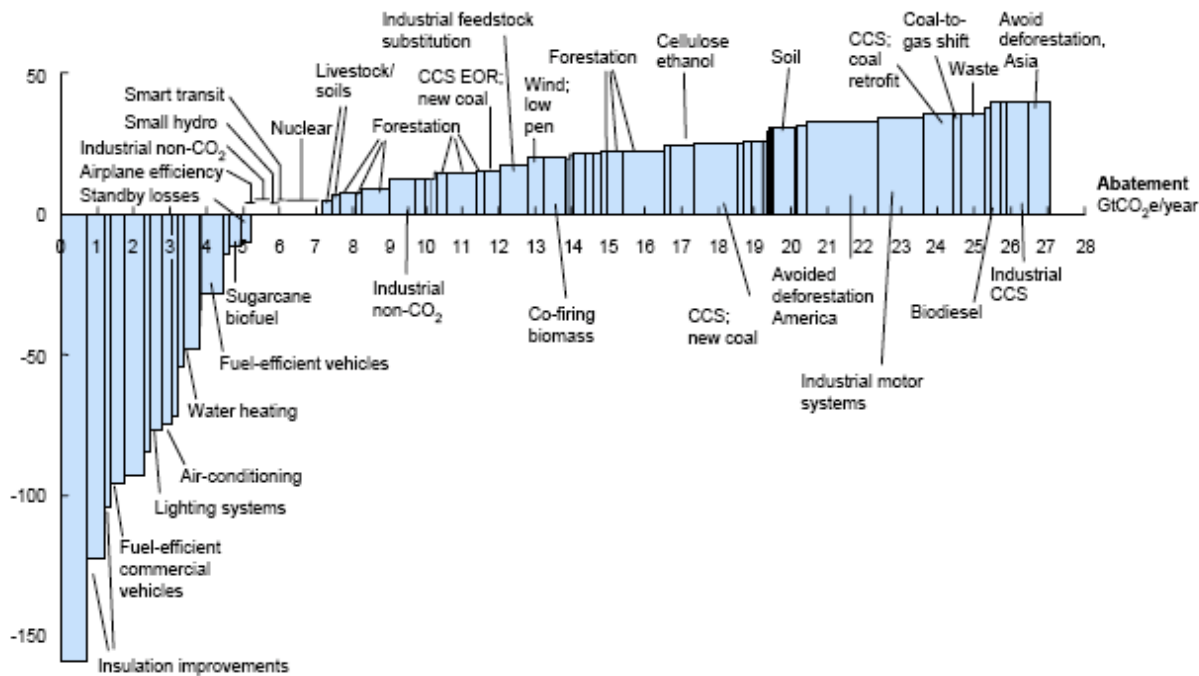
## **1 BACKGROUND**

Energy efficiency is critical to addressing economic competitiveness and confronting global warming. Energy efficiency creates new industries and more jobs, while reducing the need to invest in costly new generation. Moreover, energy efficiency will mitigate future climate change and the enormous associated cost of environmental disaster. Yet Oregon need not pay for energy efficiency alone. There exists an expanding pool of public and private capital looking to invest in states that are aggressive on energy efficiency.<sup>1</sup> This is a limited time offer: if Oregon fails to act now, that capital will go somewhere else. Oregon has a narrow window, both environmentally and financially, in which to continue its leadership role in energy efficiency.

Figure 1 illustrates that energy efficiency investments offer the most *net positive* benefits of any technology to confront climate change.

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<sup>1</sup> SB-838 allows utilities to seek additional energy efficiency funds through tariffs to acquire cost-effective electric resource identified in their IRP process.

**Figure 1: McKinsey climate change abatement cost curve****THE COST CURVE PROVIDES A “MAP” OF ABATEMENT OPPORTUNITIES**Cost of abatement, 2030, €/tCO<sub>2</sub>e\*

\* Cubic feet of carbon equivalents.

Source: McKinsey and Vattenfall analysis

Yet despite such economic potential, we have made only modest investments in adequate energy efficiency resources. **Long repayment periods and high up front costs** deter investments. Incentive programs and implementation strategies constrained by modest budgets have created products too small and **too uncertain for private capital**. And traditional programs and incentive schemes have **relied too heavily on consumers** of energy to educate themselves and initiate efficiency improvements.

EEPI's primary goals are to:

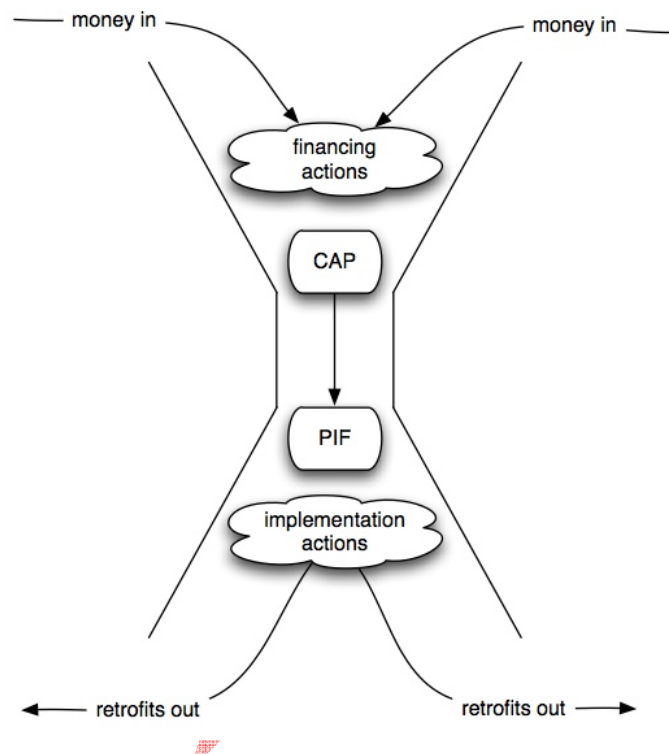
- **Catalyze mass scale retrofits.** This is desirable both environmentally and financially – the greater the scale, the more opportunity for aggregation, certainty, etc.
- **Access deep/patient capital.** The financing plan should appeal to capital that tolerates a payback period of at least 20 years at low interest rates.
- **Accelerate the pace of retrofits.** Not only must we urgently confront climate change, we must also capitalize on a national trend of capital moving into “green” projects and promotion.
- **Enhance social equity.** The initiative must support affordable and low-income housing, create benefits that exceed costs, and catalyze workforce development.

- **Broaden the scope of retrofits.** The initiative must address behavioral constraints to action through simplicity, an enhanced customer experience, and direct engagement with the property owner.

To achieve these goals, the EEPI builds off the successful work of the Governor's Energy Efficiency Work Group (EEWG), and provides direction on a subset of proposals outlined by that group (retrofits, private financing, and affordability). The project to define EEPI has been strongly influenced by financing proposals put forward locally, as well as by national examples of energy efficiency as compiled in a recent report by Efficiency Vermont, the work of Joel Rogers at the Center on Wisconsin Strategy, and work by the Clinton Climate Initiative and the McKinsey Global Institute.

EEPI is not a mandate, and is silent on which kinds of financing should be included and how that financing should be spent. Instead, EEPI is a coordinator and a funnel. **It is a structure to link capital all the way to the end user.**

**Figure 2: Linking capital to a project - EEPI is the structure.**



## 2 FINANCING

To bring together as many sources of capital as possible into a system with streamlined and centralized implementation and repayment, EEPI envisions creating a Joint Energy Financing Fund (JEFF) created through a "capital assembly platform" (CAP). The CAP will act as a bank-type mechanism to handle all the accounting to

connect investments, pay-outs, repayments, risk management, interaction with rating agencies, and more. CAP can bring together capital sources such as, but not limited to:

- State bonds (e.g. SELP)
- Local government finance, (e.g. local bonds)
- Utility funds
- Pensions
- Private investment (aggressive or patient)

CAP is the larger administrative organization that houses JEFF. JEFF exists solely to loan funds to the Program Implementation Function (PIF), described below.

The structure and location of the CAP should be the one that best allows it to leverage both public and private money at multiple levels. It could be a public entity, perhaps housed within the Office of the State Treasurer, SELP/ODOE, or elsewhere. It could also be a brokered fund that is privately-managed with public accountability and contributions. It could also be some sort of hybrid model. EEPI will investigate the extent to which Oregon law allows for the creation of semi-private agencies that would allow for short-term direct private investment.

## 2.1 REPAYMENT

In general, there are two main options for repayment that attaches a loan to a property and not an individual: tying repayment to property taxes, or adding the payment to a utility bill (on-bill financing). Both methods have advantages and disadvantages, and EEPI should explore both methods.

The biggest challenge with repayment is aggregation. To achieve broad energy savings, it is necessary to ensure that the payments for the loan do not exceed the benefit. This criterion alone could preclude potentially lower return projects (e.g. solar installations on relatively new and efficient homes). However, to maximize the benefit of this program and reduce administration costs, the program needs to be mass scale. Allowing “extra” benefits in one area or building to pay for lower or a loss of benefits in another area is the benefit of aggregation across a set of properties. It also makes this program, perhaps combined with additional subsidies and incentives, applicable to low-income families and provides for a potential application to affordable housing.

Another benefit of aggregation is the simplification of the building audit to determine ROI. The package of efficiency and renewable energy options will be structured with a standardized set of risk and return assumptions that should hold true in the aggregate.

EEPI requires a relatively standard package of retrofit options with known aggregate costs and benefits. This standardization is necessary for the capital markets as well, and would simplify a detailed energy audit, though there is a tradeoff between

standardization and customization for depth of the efficiency savings (see the Phasing section). A more simplistic efficiency review (for example, a simple checklist tool, with a social marketing messaging built in, that is tied to a simplified finance agreement), or consumer opt-out, could remove parts of the package (e.g. trees may prevent solar, or insulation may already be installed). There would also need to be regular review to verify savings, which could be built into the program.

An option here would be to design a system that has a standard package with a guaranteed return and a known set of high return investments, and an optional secondary package that contains more risk and less certainty for those property owners that wish to shoulder the risk. This program might even be separate from a program focused on this secondary package that doesn't guarantee a return, for examples, the proposed Oregon Sustainable Energy Assistance Act.

### 3 IMPLEMENTATION

A major shortcoming of past energy efficiency programs has been that they rely on an end user to understand and access the program. People have busy lives and competing demands on their time, and participation languishes. EEPI reverses this structure and starts with the end user.

PIF is the body responsible for ensuring oversight, branding, verification, and payment collection (via utilities, municipalities, etc.). PIF could be part of ODOE, exist on its own, or be a melding of other programs (ETO, etc). PIF could also potentially exist with publicly owned utilities (PUDs). PIF's sole source of financing is the CAP. PIF's administration costs are paid for out of user fees (whether a lump sum, or an interest add on). A key requirement for both PIF and CAP is that after an initial expenditure to establish the program, in the long run, **the state general fund is not a source of funding.**

Similar to the existing contracting structure of the ETO, as well as many private companies (e.g cable or satellite television providers), PIF manages implementation through contracting and RFPs for project management. The key to PIF is that:

- Contracting is done for project management, marketing, outreach, and implementation management
- Any organization or entity with the demonstrated ability to meet the outreach implementation goals, and manage contractors, can apply for an outreach contract, including the ETO (if not part of PIF), community colleges, neighborhood groups, private companies, utilities, labor unions, and more. This could differ by locality.
- Because all branding is done by PIF, the end user sees only the program, and not the implementer. This exposes the end user to a smaller array of entities. The implementing contractor has a client the project manager, and not the property owner.

The project manager will have aggressive targets for the program. The program should be as close to “opt-out” as possible. We envision a grassroots door-to-door campaign to sign up end users. At each step, the customer is guided to make the next step. The project manager explains the program, the costs, and benefits, and schedules an inspection and installation time. The project manager manages the actual implementation contractors, or at least (and preferably) a general contractor. The end user need only say yes.

The project manager is responsible for hiring and managing the implementation contractors (electricians, carpenters, etc). They will be responsible for ensuring projects are on time and on budget. The project manager will serve as an intermediary who is independently-motivated, trustworthy, and able to walk the property-owner through the whole process. It will be important to design contracting system, both for project managers and contractors, with clear standards and incentives for general contracting expertise.

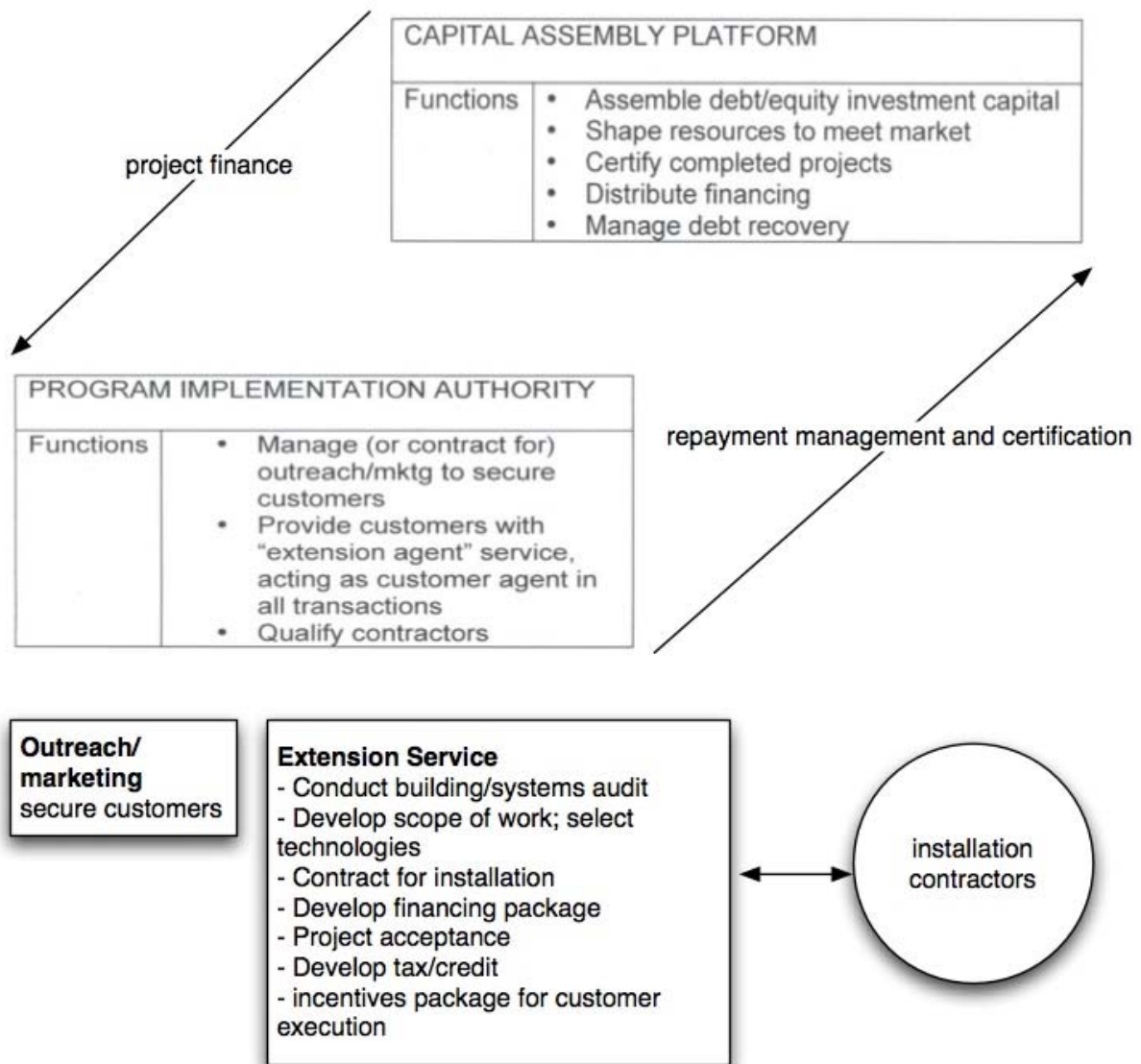
Another important element of PIF is that the end user can access the program through multiple means. They can wait for the outreach contractor to contact them, or they can call a contractor themselves. They can also call the ETO, or their utility, who would connect them with PIF. Contractors who want to sell services can also do direct sales, under the requirement that for a project to access JEFF money, contractors are required to connect the end user with PIF and the rest of the package.

Verification of the installation and savings will be important. This is an area in need of further research. Another question is whether PIF handles verification, or whether it should be run through another agency like DEQ. Regardless, verification should be a flat-rate built-in charge and a fixed part of the package

Another unresolved issue is how to create a bounty for kilowatt hours saved and

One of the most important unresolved questions is how to ensure EEPI works for low-income residents affordable housing providers. At a minimum, the program fee could be waived for those in a predefined low-income bracket or who are housing providers.

**Figure 3: Diagram of the CAP-PIF relationship (called authority here).**



## 4 PHASING

One of the biggest challenges for a program of this scope is that there will be a steep learning curve to work out details that will only be known after the program starts, particularly across jurisdictions of utilities. There is risk in being the first mover in the program, both on the capital side and on the implementation side. What is needed is a body that will be "first in the pool" to invest capital and then apply for outreach contracts to begin the process. In doing so, that body may incur risks.<sup>2</sup> However, it may

<sup>2</sup> There also is a workforce training phase that needs to begin as soon as possible to enable labor capacity to scale up quickly as capital aligns.

be worthwhile for the public sector to bear the initial risks to pave the way for private capital investment.

To minimize risk and to explore tradeoffs, the bones of EEPI could be set up by the legislature with a directed phased approach. Phase 1 will include pilot projects in both urban and rural areas, for example, in the Portland Metro area (including Gresham), Eugene, Roseburg, Ashland, or Klamath Falls. After phase 1, the legislature could address any problems that arose, and then roll out the full program in phase 2.

Phase 1 must also include changes in statute that will allow for the pilot programs. For example, municipal bonding authority will likely need to be expanded, and there needs to be a solution to address building code requirements so that EEPI improvements don't automatically trigger burdensome code updates. Phase 1 should also align EEPI with the work of the EEWG, for example, with green certification programs.

#### 4.1 ADDITIONAL OUTSTANDING ISSUES

In addition to the questions, choices, and tradeoffs discussed in above sections, there remain a number of outstanding issues. Some of these issues could be addressed during phasing, and some will have to be addressed before phasing.

- Repayment – what is the mechanism and what is the guarantee of savings? Fixed savings or fixed fee? Is it possible to blend the two?
  - If the program allows OBF, how can OBF be structured so that it is not a burden to utilities?
  - Are there ways to separate out less certain investments to consider on a case-by-case basis?
  - How do you legally and technically blend capital with different requirements attached to it?
  - How is this relevant to low income and affordable housing?
  - To whom does risk accrue?
  - What are the underwriting criteria?
  - Could the criteria to qualify for EEPI change with the kind of capital playing the CAP?
  - Who determines the ROI on the initial package of investments?
  - How do we build a system that does retrofits that allow for future innovation? The program can't go back every 5 years to property owners. The system should allow for changes like district energy.
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- How do we leverage existing capacity in the ETO, while allowing the program to be relevant outside IOU territory?
- How do we avoid or mitigate issues of cross subsidy between gas and electric utilities?
- How does the system integrate a cap and trade or carbon tax revenue to buy down debt?
- How much will administration cost, how much will contractors pay to be part of the program, and how much will the up-front cost be for end-users? What is the set up cost?
- How does this program integrate potential local LID funding, and with programs that require green certification?
- How can a local entity, such as a city or county, pioneer implementation in a way that proves the return to the private market?
- How will repayment with property tax collections work in timber dependant counties where local assessors are stretched thin?

Many other issues exist that will emerge over time.