

## Fuel Cell Financing for Tax-Exempt Entities

Facilitating deployments by structuring energy service contracts to include the Energy Investment Tax Credit.

### Introduction

The Energy Investment Tax Credit (ITC)<sup>1</sup> can help reduce the cost of installing a fuel cell system. While Department of Treasury regulations prevent tax-exempt entities, e.g., not-for-profit organizations, from directly taking advantage of tax benefits for property that they own, the Internal Revenue Code (IRC) and Treasury regulations allow these entities to enter into contract-for-services agreements with private-sector project developers such as fuel cell vendors and energy service providers. Structured to comply with IRC rules, these contract-for-services agreements can be negotiated so that both the tax-exempt customer and the project developer can benefit from the tax credit.

### Energy Investment Tax Credit for Fuel Cell Systems

(As amended by Section 103 of the Emergency Economic Stabilization Act of 2008)

- Tax credit of 30% of eligible project costs, up to \$3,000/kW
- Minimum 0.5 kW capacity
- Valid until December 31, 2016
- Electricity-only efficiency of more than 30%
- Eligibility extended to utilities and telecommunications firms
- Allowance of credit is permissible through work with DOE national laboratories.



Fuel cells in a combined heat and power installation. Courtesy of UTC Fuel Cells.

### How It Works

In a contract for energy services<sup>2</sup>, a tax-paying private sector project developer owns and operates the fuel cell system and sells the electricity produced (and heat if applicable) to an energy user customer. The fuel cell can be physically installed on the energy user's property and may provide energy exclusively to an energy user's facility. Under this agreement, the project developer can establish tax-ownership of the system and is entitled to the income, gain, deduction, loss, and tax credits from the fuel cell and the energy services contract.

### Example: Fuel Cell Purchase vs. Ten-Year Fuel Cell Service Contract

The following table compares (1) the cost of directly purchasing a 300 kW fuel cell for a combined heat and power (CHP) system with (2) the cost of purchasing the electricity and heat from the same fuel cell system through a service contract.

### Tax Credit vs. Tax Deduction

#### Which is worth more?

A tax credit is generally more valuable than an equivalent tax deduction. A tax credit reduces the tax owed dollar-for-dollar, while a deduction only reduces a percentage of the tax that is owed. Taxpayers can itemize fuel cell purchases on their federal income tax form, which will reduce the total amount of tax they will pay to the Internal Revenue Service.

In Case 1, the energy user purchases and installs the fuel cell system directly. The energy user pays the up-front costs associated with purchasing and installing the fuel cell in addition to the annual costs of operating and maintaining the fuel cell. As a tax-exempt entity, the energy user cannot claim the ITC for the fuel cell purchase.

## Example Cost Comparison for a 300 kW Fuel Cell Combined Heat and Power System in California: Fuel Cell Purchase vs. a Ten-Year Fuel Cell Service Contract

Case 1: Energy User Purchases and Installs System

Case 2: Energy User Holds Service Contract for System

Tax Status of Owner	Tax-exempt	Taxpayer
<b>Installed Cost</b>		
Purchased Price	\$1,500,000	\$1,500,000
Installation Expenses	584,000	584,000
Sales Tax (California)	0	105,000
Third-Party Financing Expenses	0	60,000
Installation Cost	\$2,084,000	\$2,249,000
State Grant (California location and eligibility) <sup>3</sup>	(750,000)	(750,000)
Federal ITC <sup>4</sup>	0	(675,000)
ITC Financing and Transaction Expenses <sup>5</sup>	0	200,000
Net Installation Cost	\$1,334,000	\$1,024,000
<b>Net Installation cost impact to energy user</b>	<b>\$1,334,000</b>	<b>\$0<sup>6</sup></b>
<b>Annual Energy Operating and Maintenance (O&amp;M) Costs</b>		
Annual Maintenance Cost	\$150,000	\$150,000
Annual Fuel Consumption	175,000	175,000
Annual Energy Savings	(289,000)	(289,000)
Third-Party Financing Costs <sup>7</sup>	0	117,000
Net Annual Energy O&M Costs	\$36,000	\$153,000
<b>Cumulative O&amp;M cost impact to energy user (10 years)</b>	<b>\$360,000</b>	<b>\$1,530,000</b>
<b>TOTAL COST IMPACT TO ENERGY USER</b>	<b>\$1,694,000</b>	<b>\$1,530,000</b>
<b>TOTAL COST IMPACT TO ENERGY USER, Present Value<sup>8</sup></b>	<b>\$1,525,000</b>	<b>\$1,126,000</b>
<b>COST SAVINGS TO ENERGY USER, Present Value</b>	<b>0</b>	<b>\$399,000</b>

The **Investment Tax Credit (ITC)** reduces the project developer's up-front costs by 23% in Case 2 (from \$1,334,000 to \$1,024,000) compared to the energy user's up-front costs in Case 1, who is ineligible for the ITC. The energy user can indirectly benefit from the tax credit, assuming the developer passes the ITC tax savings through the service contract in Case 2.

Since the contract services in Case 2 are payable over time, the energy user avoids the up-front installation costs of \$1,334,000.

The fuel cell provides power and avoids grid charges. Example: Assuming grid charges of \$289,000/year, \$2.89M grid charges over 10 years—\$1.53M service contract over 10 years = **\$1.36M grid charges avoided** over 10 years in Case 2.

The use of a service contract in Case 2 by the energy user enables the project developer to acquire, install, and operate the system and pass the ITC tax savings to the energy user. Case 2 will **reduce the life-cycle costs to the energy user by 26%** or \$339,000 on a present-value basis over the 10-year life of the project (from \$1,525,000 to \$1,126,000) when compared to Case 1.

In Case 2, the project developer purchases the fuel cell and pays for the installation of the fuel cell on the energy user's property. The energy user then buys heat and electricity from the project developer through an energy service contract by paying a service fee for the duration of the contract. The service fee or the service contract payment allows the developer to cover O&M costs (maintenance, fuel, etc.) in addition to debt payments for the purchase and installation of the fuel cell, legal expenses, and insurance, sales, and property taxes owed by the project developer (the owner of the fuel cell). As a taxpayer, the ITC entitles the developer to subtract the amount of the credit dollar-for-dollar from their total federal tax liability. Assuming the developer passes the tax savings to the energy user as a reduction

in the service contract payments, the energy user indirectly benefits from the tax credit.

In this case, the project developer benefits from the revenue obtained by the electric power and heat sold to the energy user and also by the ITC, which will directly reduce the amount of debt required for the project. The energy user benefits from the highly efficient, uninterrupted electric power and heat supplied by the fuel cell as well as from the passthrough of the ITC and the avoidance of equipment obsolescence during its operating life.

### For More Information

For more information, visit <http://www.hydrogenandfuelcells.energy.gov>.

### References and Notes

1. IRC Subpart E Rules for Computing Investment Credit § 48.
2. A power purchase contract, in the case of a § 45 eligible project, may be just as viable.
3. Assumes fuel cell qualifies for California Self-Generation Incentive Program.
4. 30% of eligible project costs, assuming all costs can be included in the tax credit basis.
5. Includes financial transaction, accounting, and legal expenses.
6. Assumes installed costs are included in Service Contract.
7. Includes debt payments, legal expenses, insurance, and property taxes.
8. Assumes 6% discount factor.