

# **A Survey of the Administrative Costs to Government of Implementing a RPS, Feed-in Law, Competitive Tender, and Public Benefits Fund**

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## **Introduction**

This memo provides a high level overview of the implementation costs for four renewable energy policy tools: feed-in law, public benefits fund, renewable portfolio standard, and competitive tendering process. The examples below will offer the reader some idea of the range of administrative costs that can be expected to implement each of these policies, although the numbers are very specific to the individual policies and programs. There is also great variation between costs within a single policy depending on the complexity of the policy and implementation. Therefore, the reader is urged to use the numbers with caution, and recognize that they may or may not be directly applicable to the policies China is considering.

## **Feed-In Law**

The administrative costs to government are negligible for implementing a feed-in law. Generally, the main costs to government for this policy are related to the design of the policy, which occurs during the development of the policy. Once a feed-in law is in place, the costs of implementing the law are born by the utility, and are generally paid for through the utility rates, with the exception of periodic governmental reviews of the policy and changes to the feed-in rate. The governmental administrative costs will generally be quite low, while the utility resource costs (the costs incurred by the utility from paying the feed-in tariff) may be high. Many times a cap is set for the utility resource costs to ensure that costs do not exceed a pre-determined level.

## **Public Benefits Funds**

There is a huge range in the types of activities and structure of public benefits funds in the US and throughout the world. Because of this fact, there is also a large variation in the costs to administer such funds. Administration costs are defined here as the staffing, overhead, and other costs needed to oversee and administer public benefits funds. In general, the administrative costs increase in relation to the number of specific programs a fund runs and the complexity of those programs. The number of allocations a fund makes can also increase administrative costs. For example, the administrative costs of a public fund that is used to buy-down many small-scale projects would probably be higher than a fund used to support one or two large grid-tied renewable projects. Similarly, funds that administer one program, for example, a grid-tied RE production incentive, have fewer costs than funds that try to administer a variety of subsidy programs. Another factor is economies of scale; small funds have fewer economies of scale than very large funds, and therefore the proportion of the fund that is spent on administrative costs tends to be larger with small funds. Table 1 gives a range of public benefits funds and shows the administrative costs of the funds.

**Table 1. Summary of Administrative Costs for a Select Number of US PBFs**

U.S. State	Amount of Fund	Description of Programs Funded	# of Full Time Employees (40 hrs/wk)	% of Fund Spent on Admin.
CA	\$135 M	<ul style="list-style-type: none"> <li>• Tendering process for new renewables</li> <li>• Production incentive for existing renewables</li> <li>• Rebate program for small scale distributed resources</li> <li>• Customer rebate for renewable purchases</li> <li>• RE education</li> </ul>	13-15	2-3%
NY	\$14 M	<ul style="list-style-type: none"> <li>• Small scale renewable support</li> <li>• Wholesale large scale renewable support</li> <li>• Green marketing/customer education</li> <li>• Market mechanisms research and analysis</li> </ul>	7-10	7%
OR	\$10.2 M	<ul style="list-style-type: none"> <li>• Wind data collection assistance</li> <li>• Grid-tied RE production incentive for wind, solar, biomass, geothermal</li> <li>• Open-ended solicitation for financial assistance related to renewable energy projects</li> <li>• Market and resource potential analysis</li> </ul>	2-4	20%
MA	\$26 M	<ul style="list-style-type: none"> <li>• Green building program (Distributed PV and energy efficiency)</li> <li>• Premium power (fuel cell support program)</li> <li>• Wind development support program</li> </ul>	20-25	24%
IL	\$5 M	<ul style="list-style-type: none"> <li>• RE grant program for large scale RE</li> <li>• Rebate program for small scale DG</li> </ul>	1	.02%*

\* Administrative costs do not come out of the fund, so technically this number is zero. The .02% is an estimate of the proportion of the costs of managing the fund relative to the total fund.

## Renewables Portfolio Standards

There are two primary costs to government in implementing and administering a renewable portfolio standard (RPS). The first is the design of the policy, and the second comes from monitoring and verifying compliance with the policy. In the international experience, the RPS is often a part of a larger electricity law and the design of the policy is left to the administrative or rulemaking arm of government (e.g., the public utilities commission). This process can range in time from four months to nearly two years, and usually occurs after the law is promulgated. The two primary cost centers for this work from the government's perspective are staff time and consultant' fees.<sup>1</sup> The range in these costs varies greatly depending on the complexity of the law, size of the market, number of companies impacted, degree of public input, and other factors. Because of the huge variation, we do not attempt to estimate costs with precision here. However, we note that government staffing needs for these activities in U.S. states rarely exceeds 2 full-time equivalent (staff). If a 6-month process for developing the RPS is used, and additional legal and consulting fees are included, this might equate to \$100,000 – \$300,000 for the implementation of a state RPS. A national RPS, on the other hand, might expect far greater policy development costs.

The other primary cost to government in administering an RPS is monitoring and verifying compliance with the policy. Most US states and countries that have passed an RPS have used

<sup>1</sup> Frequently consultants are used to conduct analysis on the cost and impacts of an RPS policy and to research market conditions under which an RPS would be implemented. Also, sometimes assistance is needed to prepare for public meetings.

one of two primary methods of verifying compliance with the law. The first is a contract path accounting method, and the second is a certificate-based accounting method.

### Contract-Path Method

Contract-path systems use electricity supply contracts and receipts to verify the quantity and characteristics of the electricity purchased by the utility. Generally, a company's product or portfolio mix is considered to be a sum of its energy contracts. Contract-path systems are characterized by a third party review (usually an auditor) of sworn statements, contract receipts and other proof of generation and transfer of ownership (e.g. between a generator, intermediary, or final marketer). Meter data is sometimes used to verify such attestations and contracts.

The cost of contract-path accounting is usually borne by the utility. Typically, the utility will hire an auditor to review its contracts according to protocol developed by the regulatory agency and determine compliance. The fee for such auditing services in the US by a large accounting firm is generally between \$15,000 - \$40,000 per audit conducted. The cost to the government of developing the auditing protocol could range from \$50,000 - \$200,000 if a consultant is used. There are now good examples of contract-path auditing protocol from the U.S. that will help lower the development costs for new states.

### Certificate-Based Systems

Certificate-based tracking systems are increasingly the tool of choice in accounting for RPS requirements in the U.S., Europe and Australia. Under certificate-based tracking systems, certificates are electronically issued for each unit of recorded renewable generation. Individual certificates are typically identified by a unique serial number. Once certificates are issued, they can be traded and transferred regardless of the actual energy flow. Certificate ownership is tracked electronically, and all certificate trades are recorded in electronic accounts (much like electronic bank accounts). At the end of an RPS compliance period, regulators can easily check the utilities' electronic certificate accounts to determine if those suppliers own sufficient quantity and type of certificates to meet their RPS requirements.

The administrative costs for developing a certificate tracking system for RPS compliance vary greatly, depending on the complexity of the system.

Table 2 shows some of the costs of developing a certificate tracking system.

**Table 2. Costs of Certificate Tracking Systems**

Name	Core Characteristics	Start-up Costs	Operational Costs
US: New England Generation Information System	<ul style="list-style-type: none"> <li>• Tracks all generation in 6 state region</li> <li>• Mandatory participation by all generation units and electricity suppliers</li> <li>• Highly complex</li> </ul>	\$200,000	<p>Between \$900,000 - \$2.4M per year collected through transaction fees levied on retail electricity suppliers for load served.</p> <p>The high operational costs reflect the fact that the initial start-up costs do not reflect the full costs to develop the tracking system.</p> <p>Transaction fees:            yr 1: \$0.0176/MWh            yr 2: \$0.0173/MWh            yr 3: \$0.0123/MWh            yr 4: \$0.0098/MWh            yr 5: \$0.0074/MWh</p>
US: Wisconsin Renewable Resource Credit System	<ul style="list-style-type: none"> <li>• Tracks only renewable energy purchased in excess of WI utility requirement</li> <li>• Only electricity suppliers participate</li> <li>• Simple accounting system</li> </ul>	\$50,000	<p>Approximately \$65,000/year is collected through a \$0.135/MWh fee on the MWhs purchased by the utilities' to meet their renewable obligation under the State's RPS</p>
US: ERCOT Renewable Energy Credits system	<ul style="list-style-type: none"> <li>• Tracks only renewable generation in TX that is eligible for the RPS</li> <li>• Voluntary participation by generators, mandatory participation by companies with RPS obligation</li> <li>• Simple accounting system</li> </ul>	\$500,000*	<p>Approximately \$150,000/year is collected through transaction fees \$0.22/MWh applied to renewable certificates traded in the tracking system</p>
Netherlands:	<ul style="list-style-type: none"> <li>• Tracks only renewable generation sold into the Netherlands</li> <li>• Generators and electricity suppliers can participate</li> <li>• Simple accounting system</li> </ul>	Initial costs were amortized and paid for through the collection ongoing fees	<p>Approximately €250,000/year is collected in annual registration fees and €2.4M in annual transaction fees.</p> <p>Annual Registration Fees:            Trader/Aggregator € 2,500.00            Generators € 25.00</p> <p>Transaction Fees:            Issue certificates € 0.10            Transfer certificates € 0.02            Redeem certificates € 0.10            Import certificates € 0.02</p> <p>€ 1 is roughly equal to \$1 so we did not convert currency.</p>

\* Estimated costs based on costs to construct system with similar functionality

### Competitive Tendering Process

Competitive tendering of renewable energy contracts tends to have relatively low administrative costs to government because of the low frequency with which competitive tenders are offered (once a year), and the low number of tenders that are offered and projects commissioned.

Therefore, the key administrative costs are staff time to run the competitive bidding process, and after tenders are awarded, to monitor that companies are meeting milestones. We surveyed two

competitive tendering processes, one in California and the other in UK. Table 3 describes the administrative costs resulting from these two tendering processes.

**Table 3. Administrative Costs of Tendering Processes**

<b>Location</b>	<b># of Competitive Bidding Processes</b>	<b># of Tenders Awarded per Bidding Process</b>	<b>Administrative Costs</b>
US: California	3 over 4 years	25-55	85 person days per auction or approximately \$40,000 per auction
UK: NFFO	5 over 8 years	75-261	9 full-time equivalent staff per year; approximately \$1.2 M/year

### **Conclusions**

In conclusion, there is a wide range of administrative costs to government for administering the renewable policies considered above. The reason for this range is primarily due to the complexity of the policy. Also, a significant factor in the different costs relates to the use of consultants or a third party to administer the program, rather than a government agency. In many of the examples provided above, the policy was applied at a state level, not a federal level (with the exception of the UK NFFO) and therefore, the total costs are lower than if one of these policies were to be applied at a national level. However, as a proportion of the total funds, the administrative costs for national policy implementation may actually be proportionally lower than at the state level because of economies of scale. Because of these factors, it is difficult to draw a single conclusion about the administrative and implementation costs of each of these policies. In general, the administrative costs to government for staffing and monitoring compliance with the policy are lowest with a feed-in law, and highest with a RPS that has a certificate-tracking component.