

Appendix C

**Estimate of Costs for Proposed Regulation and Certification
Procedures for Engine Packages for use in SPCNS 2012 and Later**

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Assumption is 100 certified engines packages will be installed in SPCNS vehicles annually, and three manufacturers (33 each).
 Assumption is 2 dealerships (of the engine package manufacturer) and 10 independent repair shops will do installations, statewide. Each do 4 installs per year.
 The remaining installs are done by hobbyists themselves.
 Note that staff-estimated dollar per hour pay rates listed below include personnel overhead costs.

Manufacturers (three total)

Action	Cost	Determination of Values	Frequency	Notes
Technical development	\$25,000		One time, or at major technology changes	
Certification testing	\$50,000		Annually	Possibly much less cost if carry-over of data occurs
Sales Reporting	\$160	4 hours at \$40/hour	Annually	
Warranty reporting	\$160	4 hours at \$40/hour	Quarterly	
Emissions-related diagnostic & repair	\$396	Two hours at \$120/hour, per warranty claim, 5% warranty rate, annual total 20 hours at \$120/hour,		
Installation instructions	\$3,200	20 hours at \$40/hour	One time, or at major technology changes	

Summary for each manufacturer

One time costs	\$28,200
Annual costs	\$51,196

Installers (twelve total)

Action	Cost	Determination of Values	Frequency	Notes
Fill out affidavit and mail, take photographs	\$60	30 minutes at \$120/hour	Per installation	Each installer does 4 installs per year.
Report annually	\$40	One hour at \$40/hour	Annual total	
Emissions-related diagnostic & repair	\$48	Two hours at \$120/hour, per warranty claim, 5% warranty rate, annually		

Summary for each installer

Installation recordkeeping costs, annually	\$240
Installation reporting and repair costs, annually	\$88

End User (100 total)

Action	Cost	Determination of Values	Frequency	Notes
Purchase certified engine package	\$2,800	\$7,600-\$4,800	One time	Incremental cost over average engine cost
Have certified engine package installed	\$2,000	12 hours staff time at \$120/hr plus ~\$600 in parts		Incremental cost over average engine installation cost

Summary for each end user who installs own engine (52 total)

Purchased & installed costs	\$2,800
Annual costs	\$0

Summary for each end user who pays an installer (48 total)

	\$4,800
	\$0

assumes negligible additional installation cost if end user installs engine themselves

TOTAL COST		each	Number	Notes
Manufacturer	one-time, annual equivalent*	\$28,200	3	One-time development/tech change costs annualized over 5 years
	annual	\$51,196	3	Testing, reporting, warranty costs per year
Installer	annual	\$240	12	Total for year for four events
	annual	\$88	12	Reporting and warranty repair
End user (installing own engine)	per install	\$2,800	52	
	per install	\$0	52	
End user (paying installer)	per install	\$4,800	48	
	per install	\$0	48	
TOTAL ANNUAL COST OF REGULATION**	annual	\$550,444	annually	
Total annual costs for Mfrs**	annual	\$170,508	annually	
Total annual cost for Installers**	annual	\$3,936	annually	

* Technical development and preparation of installation manuals occurs at development cycles (major technology changes), which staff assumes occurs at 5 year intervals. These one-time costs are annualized.

** The assumptions are 100 certified engines packages will be installed in SPCNS vehicles annually, three manufacturers of certified engines packages, and 12 installers each doing 4 installations per year, with the remaining installs beng done by hobbyists themselves