MASTER

NATIONAL PLAN
FOR THE
ACCELERATED COMMERCIALIZATION
OF
SOLAR ENERGY

COST

MID-AMERICAN SOLAR ENERGY CENTER
1256 TRAPP ROAD
EAGAN, MINNESOTA 55121

SEPTEMBER, 1979

MASEC-R-79-029

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency Thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

MASEC-R--79-029 Vol. 3

DE82 013365

NATIONAL PLAN
FOR THE
ACCELERATED COMMERCIALIZATION
OF
SOLAR ENERGY^{3#}

Volume 3. ^{2#} COST

MID-AMERICAN SOLAR ENERGY CENTER

1256 TRAPP ROAD

EAGAN, MINNESOTA 55121

SEPTEMBER, 1979

DISCLAIMER

This book was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

MASEC-R-79-029 (Vol. 3)

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

MBW

TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1
REGIONAL COST SUMMARY	2
BUILDINGS SECTOR PROGRAM COST SUMMARY	3
IPH SECTOR PROGRAM COST SUMMARY	5
AGRICULTURAL SECTOR PROGRAM COST SUMMARY	6
UTILITIES SECTOR PROGRAM COST SUMMARY	7
APPENDIX	
BUILDINGS SECTOR PROGRAM COSTS	
IPH SECTOR PROGRAM COSTS	
AGRICULTURAL SECTOR PROGRAM COSTS	
UTILITY SECTOR PROGRAM COSTS	

Cost Section

This section includes the costing for programs which were written by MASEC staff and which are to be implemented by or through the center. The following programs have been costed on a standard unit of dollars equal to \$9,100. This amount represents one man-month of direct labor at projected 1980 rates. The man-month rate was attained by dividing the total center costs by the number of direct charged hours. MASEC estimates that an average of 75% of labor is direct and 25% is indirect.

Subcontract and purchased parts were costed using \$9,100 as the unit quantity. In this manner internal material costs, labor costs and external subcontract costs have an easily identifiable relationship and cost adjusting factors such as inflation can easily be integrated without changing cost ratios.

All cost items were assumed to inflate at the same rate and all labor cost whether external or internal were assumed to be identical.

The programs are separated into four market sectors: Buildings, Industrial Process Heat (IPH), Agriculture and Utilities. Each market sector is subdivided by four categories: Industrial Infrastructure Development (IID), Market Development (MD), Institutional and Legal Barriers (I&LB), and Product Definition (PD).

Each program is further classified by technology including the following categories: active, passive, woody biomass, hot water biomass, thermal, wind, synthetic fuels and all. The "all" category includes all the technologies which are relevant to the particular market sector.

REGIONAL COST SUMMARY

IN THOUSANDS OF DOLLARS

<u>Sector</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Buildings	7,665	12,730	17,687	28,504	42,291	49,769
IPH	1,099	2,305	2,905	7,098	10,193	12,013
Agriculture	2,930	4,707	5,498	9,637	12,183	12,831
Utilities	938	1,566	1,884	4,131	4,559	4,559
 TOTAL	 12,632	 21,308	 27,994	 49,370	 69,226	 79,172

6 Year Total = 259,702

BUILDINGS SECTOR
PROGRAM COST SUMMARY
(In Thousands of Dollars)

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
1. Information Dissemination	709	1,365	2,475	5,432	6,433	7,434
2. Solar Case Studies	73	100	100	100	100	100
3. Audio/Visual Library	164	164	191	191	191	191
4. Solar Index	27	27	27	-	-	-
5. Conferences & Shows	82	137	137	218	218	218
6. Resources Centers	55	82	109	136	163	191
7. Educational Assistance	27	164	164	273	273	273
8. Vo-Tech Training	200	273	783	1,347	3,277	4,295
9. Skills Upgrade	164	218	273	328	373	436
10. Financial Education	260	226	245	282	309	337
11. Builder & Realtor Ed.	245	382	546	655	764	764
12. Arch. & Eng. Ed.	109	155	200	218	218	218
13. Access Legislation	55	55	-	-	-	-
14. Codes & Regulations	173	155	146	146	146	146
15. Performance Monitor	228	282	282	282	282	282
16. Payback Analysis	91	91	91	91	118	118
17. Tract Home	100	164	209	255	200	245
18. Government Bldg. Demo.	437	719	946	1,356	1,720	2,266
19. Urban Retrofit	418	809	1,292	2,366	3,412	4,431
20. State Interface	136	163	163	163	163	163
21. Climatic Variables	55	82	82	82	27	27
22. Solar Thermal	500	755	1,264	2,484	4,159	4,886
23. Passive	526	755	1,346	2,366	3,913	4,513
24. Wind	282	837	1,101	2,700	4,904	5,924
25. Component Evaluation	109	337	337	337	337	337
26. Literature & Handbooks	137	191	191	191	191	218
27. Conservation Workshops	91	173	173	227	282	336
28. Information & Ed. Services	173	555	555	555	555	555
29. Public Affairs	355	437	519	519	519	519
30. Displays & Exhibits	119	146	146	191	236	282
31. Warranties	109	109	109	109	109	109
32. Certification Studies	164	164	164	164	164	164

BUILDINGS SECTOR
PROGRAM COST SUMMARY

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
33. Distribution Study	55	109	55	-	-	-
34. Needs & Resources	109	218	218	218	218	218
35. Market Analysis	109	109	109	109	109	109
36. Materials Development	109	109	109	109	109	109
37. Small Business Finance	655	1,658	2,575	4,049	7,844	9,100
38. Regional Planning & Coord.	255	255	255	255	255	255
 TOTAL	 7,665	 12,730	 17,687	 28,504	 42,291	 49,769

IPH SECTOR

PROGRAM SUMMARY COST

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
1. Solar Industry Coordination	27	55	82	109	109	109
2. Solar Industry Marketing	55	109	109	109	109	109
3. Industrial Financial Assist.	27	82	109	1,957	3,777	4,687
4. A & E Training & Assistance	27	209	209	209	209	209
5. Contractor & Installer Train.		82	173	118	118	118
6. Operation & Maintenance Train.				118	118	118
7. Consumer Assistance Coord.	27	55	82	109	109	109
8. Executive Awareness	118	109	82	82	91	91
9. Consumer & Economic Research	27	82	109	109	55	55
10. Target Market	118	237	155	155	91	91
11. Consumer Financial Assist.	27	146	146	146	146	146
12. Solar Promotion & Assist.		36	73	109	137	137
13. Government Coordination	37	55	82	109	109	109
14. Tax	109	164	109	109	109	109
15. Legislation	109	109	109	109	109	109
16. Legal and Regulatory	55	82	82	82	82	82
17. State & Gov't. Interface	27	55	82	109	109	109
18. Federal Gov't. Interface	27	55	82	109	109	109
19. Technology Coordination	27	55	82	109	109	109
20. Target Industry Design	82	137	137	137	137	137
21. Demonstration	118	218	364	1,465	2,921	3,837
22. Demonstration and Data Support		146	228	328	228	228
23. Product/Process Redesign			192	1,102	1,102	1,102
24. Woody Biomass	55	27	27			
TOTAL	1,099	2,305	2,905	7,098	10,193	12,013

AGRICULTURAL SECTOR
SUMMARY PROGRAM COSTS

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
1. Energy Consumption Survey	-	-	-	-	-	-
2. Thermodynamic Needs Assess	464	792	792	792	792	792
3. Energy Resource Survey	382	710	710	710	710	710
4. Energy Models Development	218	218	218	218	218	218
5. Advisory Council	27	27	27	27	27	27
6. Institutional Barriers	218	218	218	218	218	218
7. Finance Needs Assessment	55	91	91	91	91	55
8. Information Dissemination	109	137	137	137	109	109
9. Educational Training	118	118	118	118	118	118
10. Financial Information Transfer	218	328	328	328	328	328
11. Market Analysis Crop Drying	55	55	55			
12. Market Analysis - SWECS	82	118	118	118	118	118
13. Crop Drying Demonstrations	82	200	428	510	737	965
14. Urban Greenhouse Demonstration	100	146	146			
15. Dairy Hot Water Demonstration	146	146	146			
16. Livestock - Bird Shelters Demo.	109	109	109	109	109	109
17. Farm IPH Demonstration	27	237	237	209	9	9
18. Direct Combustion Demonstration	82	173	173	264	264	264
19. Small Wind Demonstration	164	255	346	1,474	1,929	1,929
20. Small Wind/Utility Interface	55	55	55	55	55	55
21. Large Wind Demonstration		55	264	1,201	2,839	2,839
22. Farm Ethanol Demonstration	55	264	391	1,529	1,756	1,984
23. Farm Methane Demonstration	55	146	282	1,420	1,647	1,875
24. Consumer Protection	109	109	109	109	109	109
 TOTAL	 2,930	 4,707	 5,498	 9,637	 12,183	 12,831

UTILITIES SECTOR
PROGRAM COST SUMMARY

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
1. Energy Cost/Value	337	337	337	337	337	337
2. Utility Assessment	191	191	191	191	164	164
3. Fuels from Waste	273	783	1,238	3,485	3,940	3,940
4. Energy Independent Farm	-	-	-	-	-	-
5. Wind/Hydrogen Storage	137	255	118	118	118	118
TOTAL	938	1,566	1,884	4,131	4,559	4,559

BUILDINGS SECTOR

PROGRAM COSTS

Market Sector: Buildings Technology: All Category: MD

Program: (1) Solar Information Dissemination

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
--	---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Technical	1.1	3	3	3	6	6	6
Cost	1.2	3	3	3	3	3	3
Management		12	24	36	48	48	48

Consultants:

Center Costs:

	18	30	42	57	57	57
--	----	----	----	----	----	----

Other Direct Costs:

Media	1.3	50	100	200	500	700	700
Materials		10	20	30	40	50	60

Total Other Costs:

	60	120	230	540	650	760
--	----	-----	-----	-----	-----	-----

Total Cost (Units):

	78	150	272	597	707	817
--	----	-----	-----	-----	-----	-----

Total Cost (Dollars):

	709	1,365	2,475	5,432	6,433	7,434
--	-----	-------	-------	-------	-------	-------

Market Sector: Buildings Technology: All Category: MD

Program: (2) Solar Case Studies

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Publication	2.3	1	1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Identification	2.1	3	3	3	3	3	3
Preparation	2.2	1	1	1	1	1	1
<u>Consultants:</u>							
<u>Center Costs:</u>							
		5	5	5	5	5	5
<u>Other Direct Costs:</u>							
Study	2.1	3	6	6	6	6	6
<u>Total Other Costs:</u>							
		3	6	6	6	6	6
<u>Total Cost (Units):</u>							
		8	11	11	11	11	11
<u>Total Cost (Dollars):</u>							
		73	100	100	100	100	100

Market Sector: Buildings Technology: All Category: MD

Program: (3) Audio/Visual Library

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
--	---------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Direct Material:

Purchased Parts

Materials		3	3	3	3	3	3
-----------	--	---	---	---	---	---	---

Sub-contract
Items

Labor & Burden:

Assembly	3.1	6	6	6	3	3	3
Preparation	3.2	6	6	6	6	6	6

Consultants:

<u>Center Costs:</u>		15	15	15	15	15	15
----------------------	--	----	----	----	----	----	----

Other Direct Costs:

Preparation	3.2	3	3	6	6	6	6
-------------	-----	---	---	---	---	---	---

<u>Total Other Costs:</u>		3	3	6	6	6	6
---------------------------	--	---	---	---	---	---	---

<u>Total Cost (Units):</u>		18	18	21	21	21	21
----------------------------	--	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>		164	164	191	191	191	191
------------------------------	--	-----	-----	-----	-----	-----	-----

Market Sector: Buildings Technology: All Category: MD

Program: (4) Solar Index Program

Task <u>No.</u>	1980 <u>Units</u>	1981 <u>Units</u>	1982 <u>Units</u>	1983 <u>Units</u>	1984 <u>Units</u>	1985 <u>Units</u>
--------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Assistance	4.1	3	3	3		
------------	-----	---	---	---	--	--

Consultants:

<u>Center Costs:</u>	3	3	3			
----------------------	---	---	---	--	--	--

Other Direct Costs:

<u>Total Other Costs:</u>	3	3	3			
---------------------------	---	---	---	--	--	--

<u>Total Cost (Units):</u>	3	3	3			
----------------------------	---	---	---	--	--	--

<u>Total Cost (Dollars):</u>	27	27	27			
------------------------------	----	----	----	--	--	--

Market Sector: Buildings Technology: All Category: MD

Program: (5) Solar Conferences and Shows

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Shows	5.1	3	6	6	6	6	6
<u>Consultants:</u>							
<u>Center Costs:</u>		3	6	6	6	6	6
<u>Other Direct Costs:</u>							
Shows	5.1	3	6	6	12	12	12
Materials	5.1	3	3	3	6	6	6
<u>Total Other Costs:</u>		6	9	9	18	18	18
<u>Total Cost (Units):</u>		9	15	15	24	24	24
<u>Total Cost (Dollars):</u>		82	137	137	218	218	218

Market Sector: Buildings Technology: All Category: MD

Program: (6) Solar Information Resource Centers

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Dissemination	6.1	3	3	3	3	3	3
<u>Consultants:</u>							
<u>Center Costs:</u>							
		3	3	3	3	3	3
<u>Other Direct Costs:</u>							
Materials	6.1	3	6	9	12	15	18
<u>Total Other Costs:</u>							
		3	6	9	12	15	18
<u>Total Cost (Units):</u>							
		6	9	12	15	18	21
<u>Total Cost (Dollars):</u>							
		55	82	109	136	163	191

Market Sector: Buildings Technology: All Category: MD

Program: (7) Educational Institutional Assistance

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Identification	7.1	3	3	3	3	3	3
Dissemination			3	3	3	3	3
<u>Consultants:</u>							
<u>Center Costs:</u>							
		3	6	6	6	6	6
<u>Other Direct Costs:</u>							
Materials		6	12	18	24	24	24
<u>Total Other Costs:</u>							
		6	12	18	24	24	24
<u>Total Cost (Units):</u>							
		3	18	24	30	30	30
<u>Total Cost (Dollars):</u>							
		27	164	164	273	273	273

Market Sector: Buildings Technology: All Category: MD

Program: (8) Vocational Technical Training

Task No.	1980 Units	1981 Units	1982 Units	1983 Units	1984 Units	1985 Units
-------------	---------------	---------------	---------------	---------------	---------------	---------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Installation	8.1	6	12	18	24	30	36
A & E	8.2	6	12	18	24	30	36

Consultants:

<u>Center Costs:</u>	12	24	36	48	60	72
----------------------	----	----	----	----	----	----

Other Direct Costs:

Finance	10	15	50	100	300	400
---------	----	----	----	-----	-----	-----

<u>Total Other Costs:</u>	10	15	50	100	300	400
---------------------------	----	----	----	-----	-----	-----

<u>Total Cost (Units):</u>	22	30	86	148	360	472
----------------------------	----	----	----	-----	-----	-----

<u>Total Cost (Dollars):</u>	200	273	783	1,347	3,227	4,295
------------------------------	-----	-----	-----	-------	-------	-------

Market Sector: Buildings Technology: All Category: IID

Program: (9) Organized Labor: Skills Upgrade

Task No.	1980 Units	1981 Units	1982 Units	1983 Units	1984 Units	1985 Units
-------------	---------------	---------------	---------------	---------------	---------------	---------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Development	9.1	6	6	6			
Implement		6	6	6	12	12	12

Consultants:

Center Costs:	12	12	12	12	12	12
---------------	----	----	----	----	----	----

Other Direct Costs:

Programs	9.2	6	12	18	24	30	36
----------	-----	---	----	----	----	----	----

Total Other Costs:	6	12	18	24	30	36
--------------------	---	----	----	----	----	----

Total Cost (Units):	18	24	30	36	42	48
---------------------	----	----	----	----	----	----

Total Cost (Dollars):	164	218	273	328	373	436
-----------------------	-----	-----	-----	-----	-----	-----

Market Sector: Buildings Technology: All Category: MD

Program: (10) Financial Community Education

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Material	16.2	1	1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Collect	10.1	12	12	12	12	12	12
Disseminate	10.2	3	3	3	3	3	3
Builders	10.3	3	3	3	3	3	3
<u>Consultants:</u>							
<u>Center Costs:</u>							
		19	19	19	19	19	19
<u>Other Direct Costs:</u>							
Workshop	16.2	3	6	9	12	15	18
<u>Total Other Costs:</u>							
		3	6	9	12	15	18
<u>Total Cost (Units):</u>							
		22	25	27	31	34	37
<u>Total Cost (Dollars):</u>							
		260	226	245	282	309	337

Market Sector: Buildings Technology: All Category: IID

Program: (11) Builder & Realtor Education

Task No.	1980 Units	1981 Units	1982 Units	1983 Units	1984 Units	1985 Units
-------------	---------------	---------------	---------------	---------------	---------------	---------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Construction	7.1	6	6	6	6	6	6
Maintenance	7.1	6	6	6	6	6	6
Marketing	7.2	6	12	12	12	12	12

Consultants:

<u>Center Costs:</u>	18	24	24	24	24	24
----------------------	----	----	----	----	----	----

Other Direct Costs:

Instruction	7.2	6	12	24	36	48	48
Media	7.2	3	6	12	12	12	12

<u>Total Other Costs:</u>	9	18	36	48	60	60
---------------------------	---	----	----	----	----	----

<u>Total Cost (Units):</u>	27	42	60	77	85	85
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	245	382	546	655	764	764
------------------------------	-----	-----	-----	-----	-----	-----

Market Sector: Buildings Technology: All Category: IID

Program: (12) Architects & Engineers Education

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Materials		1	1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Development	12.2	6	6	6	3	3	3
<u>Consultants:</u>							
<u>Center Costs:</u>							
<u>Other Direct Costs:</u>							
Workshops		5	10	15	20	20	20
<u>Total Other Costs:</u>							
		5	10	15	20	20	20
<u>Total Cost (Units):</u>							
		12	17	22	24	24	24
<u>Total Cost (Dollars):</u>							
		109	155	200	218	218	218

Market Sector: Building Technology: All Category: I & LB

Program: (13) Access Legislation

Task No.	1980 Units	1981 Units	1982 Units	1983 Units	1984 Units	1985 Units
-------------	---------------	---------------	---------------	---------------	---------------	---------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Survey 12.1 6

Model 6

Consultants:

Center Costs:

6 6

Other Direct Costs:

Total Other Costs:

6 6

Total Cost (Units):

55 55

Total Cost (Dollars):

Market Sector: Buildings Technology: All Category: I&LB

Program: (14) Codes & Regulation

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Materials		1	1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Review	14.1	6	1	1	1	1	1
Information	14.2		3	3	3	3	3
Dissemination	14.3	12	12	12	12	12	12
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		19	17	16	16	16	16
<hr/>							
<u>Other Direct Costs:</u>							
<hr/>							
<u>Total Other Costs:</u>		19	17	16	16	16	16
<hr/>							
<u>Total Cost (Units):</u>		19	17	16	16	16	16
<hr/>							
<u>Total Cost (Dollars):</u>		173	155	146	146	146	146

Market Sector: Buildings Technology: All Category: PD

Program: (15) Performance Monitoring

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Publication	15.1	1	1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Identify	15.1	3	3	3	3	3	3
Instrument	15.2	3	3				
Measure	15.3	3	3	4	4	4	4
Analyze	15.4	3	3	5	5	5	5
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		13	13	13	13	13	13
<hr/>							
<u>Other Direct Costs:</u>							
Monitor	15.1	6	12	18	18	18	18
Instrument		6	6				
<hr/>							
<u>Total Other Costs:</u>		12	18	18	18	18	18
<hr/>							
<u>Total Cost (Units):</u>		25	31	31	31	31	31
<hr/>							
<u>Total Cost (Dollars):</u>		228	282	282	282	282	282

Market Sector: Buildings Technology: Active Category: Product Definition

Program: (16) Performance/Payback Analysis

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Dissemination	16.1	1	1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Manage	16.1	3	3	3	3	6	6
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		4	4	4	4	7	7
<hr/>							
<u>Other Direct Costs:</u>							
Analysis	16.1	6	6	6	6	6	6
<hr/>							
<u>Total Other Costs:</u>		6	6	6	6	6	6
<hr/>							
<u>Total Cost (Units):</u>		10	10	10	10	13	13
<hr/>							
<u>Total Cost (Dollars):</u>		91	91	91	91	118	118

Market Sector: Buildings Technology: Active Category: Industrial
 Infrastructure Development

Program: (17) Tract Home Designs

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Materials	17.3	1	1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Manage	17.1	3	3	3	3	3	3
<u>Consultants:</u>							
<u>Center Costs:</u>		4	4	4	4	4	4
<u>Other Direct Costs:</u>							
Design	17.2	3	6	6	6	6	6
Workshops		1	1	1	1	1	1
<u>Total Other Costs:</u>		4	7	7	7	7	7
<u>Total Cost (Units):</u>		8	11	11	11	11	11
<u>Total Cost (Dollars):</u>		73	100	100	100	100	100

Market Sector: Buildings Technology: Active Category: Market Development

Program: (18) Government Building Demonstration

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Management	18.1	6	6	6	6	6	6
	18.2	6	12	12	24	24	24
	18.3	3	3	3	6	6	6
	18.4	3	3	3	3	3	3

Consultants:

<u>Center Costs:</u>	18	24	24	39	39	39
----------------------	----	----	----	----	----	----

Other Direct Costs:

Demo Hardware	18.2	30	50	70	100	150	200
Workshops			5	10	10	10	10

<u>Total Other Costs:</u>	30	55	80	110	160	210
---------------------------	----	----	----	-----	-----	-----

<u>Total Cost (Units):</u>	48	79	104	149	184	249
----------------------------	----	----	-----	-----	-----	-----

<u>Total Cost (Dollars):</u>	437	719	946	1,356	1,720	2,266
------------------------------	-----	-----	-----	-------	-------	-------

Market Sector: Buildings Technology: Active Category: Market Development

Program: (19) Urban Retrofit Expositions

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Publish	19.2	1	2	3	3	3	3
Sub-contract Items							
<u>Labor & Burden:</u>							
Identify	19.1	3	6	6	6	6	6
Management		9	12	24	36	48	60
<u>Consultants:</u>							
<u>Center Costs:</u>		13	20	33	45	57	69
<u>Other Direct Costs:</u>							
Design Teams		3	6	6	12	12	12
Workshops	19.4		3	3	3	6	6
Demo		30	60	100	200	300	400
<u>Total Other Costs:</u>		33	69	109	215	318	418
<u>Total Cost (Units):</u>		46	89	142	260	375	487
<u>Total Cost (Dollars):</u>		418	809	1,292	2,366	3,412	4,431

Market Sector: All Technology: All Category: I & LB

Program: (20) State Energy 1 Planning Agency Interface

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

20.1	3	3	3	3	3	3
20.2	3	3	3	3	3	3
20.3	3	3	3	3	3	3
20.4	6	6	6	6	6	6
20.5	-	3	3	-	-	-

Consultants:

Center Costs:

15	18	18	15	15	15
----	----	----	----	----	----

Other Direct Costs:

Study Team	3	3	3
------------	---	---	---

Total Other Costs:

3	3	3
---	---	---

Total Cost (Units):

15	18	18	18	18	18
----	----	----	----	----	----

Total Cost (Dollars):

136	163	163	163	163	163
-----	-----	-----	-----	-----	-----

Market Sector: Buildings Technology: Wind Category: Product Definition

Program: (21) Analysis of Climatic Variables

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Assess Data	2.1	5	1	1	1	1	1
Data Gather	2.2		2	2	2	2	2
Model	2.3		5	3	3		
Evaluate Model	2.4			3	3		
Recommend	2.5	1	1				

Consultants:

<u>Center Costs:</u>	6	9	9	9	3	3
----------------------	---	---	---	---	---	---

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	6	9	9	9	3	3
----------------------------	---	---	---	---	---	---

<u>Total Cost (Dollars):</u>	55	82	82	82	27	27
------------------------------	----	----	----	----	----	----

Market Sector: Buildings Technology: Solar Thermal Category: Market Development

Program: (22) Solar Thermal

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Survey & Select	22.2	6	6	6	6	6	6
Criteria Anal.	22.3	3	3	3	3	3	3
Active Program	22.4	12	12	12	12	12	12
Space Condition	22.5	3	3	3	3	3	3
Heat Pump	22.6	3	3	3	3	3	3
<u>Consultants:</u>							
<u>Center Costs:</u>		27	27	27	27	27	27
<u>Other Direct Costs:</u>							
Demo HW	22.1	25	50	100	200	400	400
Monitor HW	22.2	3	6	12	24	48	48
Monitor Space Ht	22.3				6	6	6
Demo Space Ht	22.4				6	6	6
Demo Heat Pump	22.5				10	25	50
<u>Total Other Costs:</u>		28	56	112	246	485	510
<u>Total Cost (Units):</u>		55	83	139	273	512	337
<u>Total Cost (Dollars):</u>		500	775	1,264	2,484	4,159	4,886

Market Sector: Buildings Technology: Passive Category: Market Development

Program: (23) Passive

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Develop Models	23.1	6	6	6	6	6	6
Prepare Aids	23.3	6	6	6	6	6	6
Management	23.4	6	12	18	24	36	48

Consultants:

<u>Center Costs:</u>	18	24	36	36	48	60
----------------------	----	----	----	----	----	----

Other Direct Costs:

Build Models	23.2	6	6	6	12	12	12
Large Demo	23.4	30	50	100	200	400	400
Monitor	23.5	3	3	6	12	18	24

<u>Total Other Costs:</u>	39	59	112	224	430	436
---------------------------	----	----	-----	-----	-----	-----

<u>Total Cost (Units):</u>	57	83	148	260	478	496
----------------------------	----	----	-----	-----	-----	-----

<u>Total Cost (Dollars):</u>	526	755	1,346	2,366	3,913	4,513
------------------------------	-----	-----	-------	-------	-------	-------

Market Sector: Buildings Technology: Wind Category: Product Definition

Program: (24) Wind

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Publish		2	2				
Sub-contract Items							
<u>Labor & Burden:</u>							
Survey	24.1	3	3	3			
Analyze	24.2	3	3	3	3	3	3
Materials	24.3		1	1			
Manage			12	12	24	36	48
<u>Consultants:</u>							
<u>Center Costs:</u>							
		6	21	21	48	39	51
<u>Other Direct Costs:</u>							
Loan	28.4				50	100	200
Demonstrations		25	50	100	200	400	400
<u>Total Other Costs:</u>							
			71	100	250	400	600
<u>Total Cost (Units):</u>							
		31	92	121	298	439	651
<u>Total Cost (Dollars):</u>							
		282	837	1,101	2,700	4,904	5,924

Market Sector: Buildings Technology: All Category: Product Definition

Program: (25) System Component Evaluation and Artification

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Equipment			3	6	6	3	
Sub-contract							
Items							
<u>Labor & Burden:</u>							
Lab Survey	25.1	3					
Define Tests	25.3	3					
Procedures		6	6				
			3	6	6	6	12
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		12	12	12	12	12	12
<hr/>							
<u>Other Direct Costs:</u>							
Equipment			25	25	25	25	25
<hr/>							
<u>Total Other Costs:</u>		25	25	25	25	25	25
<hr/>							
<u>Total Cost (Units):</u>		12	37	37	37	37	37
<hr/>							
<u>Total Cost (Dollars):</u>		109	337	337	337	337	337

Market Sector: Buildings Technology: All Category: Market Development

Program: (26) Solar Literature & Handbooks

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Materials			3	3	3	3	3
Sub-contract Items							
<u>Labor & Burden:</u>							
Lit. Survey	26.1	3	3	3	3	3	3
Retrieval	26.2	6	6	3	3	3	3
Handbook	26.3		3	3	3	3	3
Audience	26.4	3	3	3			
Repackage			3	6	9	9	12
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		15	21	21	21	21	24
<hr/>							
<u>Other Direct Costs:</u>							
<hr/>							
<u>Total Other Costs:</u>							
<hr/>							
<u>Total Cost (Units):</u>		15	21	21	21	21	24
<hr/>							
<u>Total Cost (Dollars):</u>		137	191	191	191	191	218

Market Sector: Buildings Technology: All Category: Market Development

Program: (27) Solar Energy & Conservation Workshops

	Task No.	1980 Units	1981 Units	1982 Units	1983 Units	1984 Units	1985 Units
<u>Direct Material:</u>							
Purchased Parts							
Publish	27.3	1	1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Conferences	27.1	3	6				
Arch Workshops	27.2	6	6	6	6	6	6
<u>Consultants:</u>							
<u>Center Costs:</u>							
		10	13	7	7	7	7
<u>Other Direct Costs:</u>							
Conferences	27.2		6	12	18	24	30
<u>Total Other Costs:</u>							
			6	12	18	24	30
<u>Total Cost (Units):</u>							
		10	19	19	25	31	37
<u>Total Cost (Dollars):</u>							
		91	173	173	227	282	336

Market Sector: Buildings Technology: All Category: Market Development

Program: (28) Information and Education Services

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
	28.2	2	2	2	2	2	2
	28.3	2	2	2	2	2	2
Sub-contract Items							
<u>Labor & Burden:</u>							
	28.1	6	12	12	12	12	12
	28.2	6	12	12	12	12	12
	28.3	3	3	3	3	3	3
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		19	31	31	31	31	31
<hr/>							
<u>Other Direct Costs:</u>							
Equipment & Service		10	20	30	30	30	30
<hr/>							
<u>Total Other Costs:</u>			20	30	30	30	30
<hr/>							
<u>Total Cost (Units):</u>		19	51	61	61	61	61
<hr/>							
<u>Total Cost (Dollars):</u>		173	464	555	555	555	555

Market Sector: Buildings Technology: All Category: Market Development

Program: (29) Public Affairs

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
TV Time	29.4	6	6	6	6	6	6
Sub-contract Items							
<u>Labor & Burden:</u>							
Contact Sess.	29.1	12	24	36	36	36	36
Speaker's Bur.	29.2	3	3	3	3	3	3
Energy Show	29.3	3	3	3	3	3	3
TV	29.4	6	6	6	6	6	6
<u>Consultants:</u>							
<u>Center Costs:</u>							
		30	42	51	51	51	51
<u>Other Direct Costs:</u>							
Show	29.3	3	3	3	3	3	3
TV Prep.		6	3	3	3	3	3
<u>Total Other Costs:</u>							
		9	6	6	6	6	6
<u>Total Cost (Units):</u>							
		39	48	57	57	57	57
<u>Total Cost (Dollars):</u>							
		355	437	519	519	519	519

Market Sector: Buildings Technology: All Category: Market Development

Program: (30) Displays and Exhibits

	Task No.	1980 Units	1981 Units	1982 Units	1983 Units	1984 Units	1985 Units
<u>Direct Material:</u>							
Purchased Parts							
Buy Van	30.1		5				
Booth	30.2	2					
Print		1	1	1	1	1	1
Sub-contract							
Items							

Labor & Burden:

Design Van	30.1	3					
Operate	30.1		3	3	3	3	3
Booth	30.2	1	1	1	1	1	1
State Booths	30.3	3	3	3	3	3	3
Information		3	3	3	3	3	3

Consultants:

<u>Center Costs:</u>	13	16	11	11	11	11
----------------------	----	----	----	----	----	----

Other Direct Costs:

Display			5	10	15	20
---------	--	--	---	----	----	----

<u>Total Other Costs:</u>			5	10	15	20
---------------------------	--	--	---	----	----	----

<u>Total Cost (Units):</u>	13	16	16	21	26	31
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	119	146	146	191	236	282
------------------------------	-----	-----	-----	-----	-----	-----

Market Sector: Buildings Technology: All Category: Market Development

Program: (31) Warranties

Task No.	1980 Units	1981 Units	1982 Units	1983 Units	1984 Units	1985 Units
-------------	---------------	---------------	---------------	---------------	---------------	---------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Study	31.1	3	3	3	3	3
Liason	31.2	3				
Model		3				
Information		3	3	3	3	3

Consultants:

<u>Center Costs:</u>	12	6	6	6	6	6
----------------------	----	---	---	---	---	---

Other Direct Costs:

Warrantee			6	6	6	6
Investigation						

<u>Total Other Costs:</u>			6	6	6	6
---------------------------	--	--	---	---	---	---

<u>Total Cost (Units):</u>	12	12	12	12	12	12
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	109	109	109	109	109	109
------------------------------	-----	-----	-----	-----	-----	-----

Market Sector: Buildings Technology: All Category: Product Definition

Program: (32) Certification Studies

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Study	32.1	6	6	6			
Process	32.2				6	6	6
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		6	6	6	6	6	6
<hr/>							
<u>Other Direct Costs:</u>							
Study		12	12	12	12	12	12
<hr/>							
<u>Total Other Costs:</u>		12	12	12	12	12	12
<hr/>							
<u>Total Cost (Units):</u>		18	18	18	18	18	18
<hr/>							
<u>Total Cost (Dollars):</u>		164	164	164	164	164	164

Market Sector: Buildings Technology: All Category: IID

Program: (33) Production Distribution Study

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
--	---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Study	33.1	6	6				
	33.2		3	3			
	33.3		3	3			

Consultants:

<u>Center Costs:</u>	6	12	6				
----------------------	---	----	---	--	--	--	--

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	6	12	6				
----------------------------	---	----	---	--	--	--	--

<u>Total Cost (Dollars):</u>	55	109	55				
------------------------------	----	-----	----	--	--	--	--

Market Sector: Buildings Technology: All Category: Market Development

Program: (34) Regional Needs & Resources

Task No.	1980 Units	1981 Units	1982 Units	1983 Units	1984 Units	1985 Units
-------------	---------------	---------------	---------------	---------------	---------------	---------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Survey	34.1	6	3	3	3	3	3
Analysis	34.2		3	3	3	3	3
Wind	34.3	6	6	6	6	6	6

Consultants:

<u>Center Costs:</u>	12	12	12	12	12	12
----------------------	----	----	----	----	----	----

Other Direct Costs:

	6	12	12	12	12
--	---	----	----	----	----

<u>Total Other Costs:</u>	6	12	12	12	12
---------------------------	---	----	----	----	----

<u>Total Cost (Units):</u>	12	24	24	24	24	24
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	109	218	218	218	218	218
------------------------------	-----	-----	-----	-----	-----	-----

Market Sector: Buildings Technology: All Category: Market Development

Program: (35) Market Analysis

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Short Term	35.1	6	6	6	6	6
Long Term	35.2	3	3	3	3	3
Projections	35.3	3	3	3	3	3

Consultants:

<u>Center Costs:</u>	12	12	12	12	12	12
----------------------	----	----	----	----	----	----

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	12	12	12	12	12	12
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	109	109	109	109	109	109
------------------------------	-----	-----	-----	-----	-----	-----

Market Sector: Buildings Technology All Category: Product Definition

Program: (36) Materials Development

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
--	---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Publish	36.1	1					
---------	------	---	--	--	--	--	--

Sub-contract
Items

Labor & Burden:

Survey	36.1	6					
Document	36.1	3					
Analysis	36.2	3	12	12	12	12	12

Consultants:

<u>Center Costs:</u>	12	12	12	12	12	12
----------------------	----	----	----	----	----	----

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	12	12	12	12	12	12
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	109	109	109	109	109	109
------------------------------	-----	-----	-----	-----	-----	-----

Market Sector: Buildings Technology: All Category: IID

Program: (37) Small Business Finance Study

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Survey	37.1	6	3	3	3	3	3
Workshops	37.2		3	6	6	9	9
Regional Plan		6					
Manage		12	24	24	36	48	60
<u>Consultants:</u>							
<u>Center Costs:</u>		24	30	33	45	60	72
<u>Other Direct Costs:</u>							
Loans		50	150	250	400	800	1,000
<u>Total Other Costs:</u>		50	150	250	400	800	1,000
<u>Total Cost (Units):</u>		72	180	283	445	862	1,072
<u>Total Cost (Dollars):</u>		655	1,658	2,575	4,049	7,844	9,100

Market Sector: Buildings Technology: All Category: Institutional and
Legal Barriers

Program: (38) Regional Planning and Coordination

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Industry	38.1	6	6	6	6	6	6
PRPB	38.2	3	3	3	3	3	3
SRAP	38.3	6	6	6	6	6	6
SSO		4	4	4	4	4	4
NPAC		6	6	6	6	6	6

Consultants:

Center Costs:

25	25	25	25	25	25	25
----	----	----	----	----	----	----

Other Direct Costs:

SSO	38.4	3	3	3	3	3	3
-----	------	---	---	---	---	---	---

Total Other Costs:

3	3	3	3	3	3	3
---	---	---	---	---	---	---

Total Cost (Units):

28	28	28	28	28	28	28
----	----	----	----	----	----	----

Total Cost (Dollars):

255	255	255	255	255	255	255
-----	-----	-----	-----	-----	-----	-----

INDUSTRIAL PROCESS HEAT SECTOR

PROGRAM COSTS

Market Sector: IPH Technology: Thermal Category: IFD

Program: (1) IPH Solar Industry Coordination & Sales Assistance

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Coordination	1.1	3	6	9	12	12	12
--------------	-----	---	---	---	----	----	----

Consultants:

Center Costs:

3	6	9	12	12	12
---	---	---	----	----	----

Other Direct Costs:

Total Other Costs:

Total Cost (Units):

3	6	9	12	12	12
---	---	---	----	----	----

Total Cost (Dollars):

27	55	82	109	109	109
----	----	----	-----	-----	-----

Market Sector: IPH Technology: Thermal Category: IID

Program: (2) IPH Solar Industry Marketing Program

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Research	2.1	6					
Information	2.2		12	12	12	12	12
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		6	12	12	12	13	12
<hr/>							
<u>Other Direct Costs:</u>							
<hr/>							
<u>Total Other Costs:</u>							
<hr/>							
<u>Total Cost (Units):</u>		6	12	12	12	12	12
<hr/>							
<u>Total Cost (Dollars):</u>		55	109	109	109	109	109

Market Sector: IPH Technology: Thermal Category: IID

Program: (3) Industrial Financial Assistance Program

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Analysis	3.1	3	3				
Venture Corp.	3.2			9	12	12	12
Report	3.3		6	3	3	3	3
<u>Consultants:</u>							
<u>Center Costs:</u>		3	9	12	15	15	15
<u>Other Direct Costs:</u>							
Corp. Funding					200	300	400
<u>Total Other Costs:</u>					200	300	400
<u>Total Cost (Units):</u>		3	9	12	215	415	515
<u>Total Cost (Dollars):</u>		27	*@	109	1,957	3,777	4,687

Market Sector: IPH Technology: Thermal Category: IID

Program: (4) IPH Architect & Engineer Training & Assistance Program

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Literature	4.3		1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Acquisition	4.1	3	4	4	4		
Information	4.3		4	4	4	8	8
Conferences	4.4		4	4	4	4	4
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		3	12	12	12	12	12
<hr/>							
<u>Other Direct Costs:</u>							
Design Tool	4.2			6	6	6	6
Conferences	4.4			6	6	6	6
<hr/>							
<u>Total Other Costs:</u>				12	12	12	12
<hr/>							
<u>Total Cost (Units):</u>		3	24	24	24	24	24
<hr/>							
<u>Total Cost (Dollars):</u>		27	209	209	209	209	209

Market Sector: IPH Technology: Thermal Category: IID

Program: (5) Contractor and Installer Training Program

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Manual				1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Data Acq.	5.1		3	3	3	3	3
Manual	5.2		6	6			
Workshops				6	6	6	6
<u>Consultants:</u>							
<u>Center Costs:</u>							
			9	16	10	10	10
<u>Other Direct Costs:</u>							
Workshops				3	3	3	3
<u>Total Other Costs:</u>							
				3	3	3	3
<u>Total Cost (Units):</u>							
			9	19	13	13	13
<u>Total Cost (Dollars):</u>							
			82	173	118	118	118

Market Sector: IPH Technology: Thermal Category: IID

Program: (6) IPH Operation and Maintenance Training

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Matures	6.2				1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Data Acq.	6.1				6	3	3
Program Dev.	6.2				6	3	3
Workshops	6.3					6	6
<u>Consultants:</u>							
<u>Center Costs:</u>							
					13	13	13
<u>Other Direct Costs:</u>							
<u>Total Other Costs:</u>							
<u>Total Cost (Units):</u>							
					13	13	13
<u>Total Cost (Dollars):</u>							
					118	118	118

Market Sector: IPH Technology: Thermal Category: Market Development

Program: (7) IPH Consumer Coordination

Task <u>No.</u>	1980 <u>Units</u>	1981 <u>Units</u>	1982 <u>Units</u>	1983 <u>Units</u>	1984 <u>Units</u>	1985 <u>Units</u>
--------------------	----------------------	----------------------	----------------------	----------------------	----------------------	----------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Coordination	7.1	3	6	9	12	12	12
--------------	-----	---	---	---	----	----	----

Consultants:

<u>Center Costs:</u>	3	6	9	12	12	12
----------------------	---	---	---	----	----	----

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	3	6	9	12	12	12
----------------------------	---	---	---	----	----	----

<u>Total Cost (Dollars):</u>	27	55	82	109	109	109
------------------------------	----	----	----	-----	-----	-----

Market Sector: IPH Technology: Thermal Category: Market Development

Program: (8) Executive Awareness Program

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Visual Aids		1	1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Development	8.1	12	9	6	6	6	6
Council	8.2		3	3	3	3	3
Speaker				3	3	3	3
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		13	9	6	6	6	6
<hr/>							
<u>Other Direct Costs:</u>							
Council			1	1	1	1	1
Speakers			1	1	1	2	2
<hr/>							
<u>Total Other Costs:</u>			2	2	2	3	3
<hr/>							
<u>Total Cost (Units):</u>		13	12	9	9	10	10
<hr/>							
<u>Total Cost (Dollars):</u>		118	109	82	82	91	91

Market Sector: IPH Technology: Thermal Category: Market Development

Program: (9) Consumer & Economic Research

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Economic	9.1	3	3			
Survey	9.2		3	3		
Analysis	9.3			3	3	3

Consultants:

<u>Center Costs:</u>	3	6	6	6	3	3
----------------------	---	---	---	---	---	---

Other Direct Costs:

Consumer	9.2	3	3	3		
Analysis	9.3		3	3	3	3

<u>Total Other Costs:</u>	3	9	12	12	6	6
---------------------------	---	---	----	----	---	---

<u>Total Cost (Units):</u>	27	82	109	109	55	55
----------------------------	----	----	-----	-----	----	----

Total Cost (Dollars):

Market Sector: IPH Technology: Thermal Category: Market Development

Program: (10) Target Market

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Workshop	1	1	1	1			
Information		1	1	1	1	1	1
Sub-contract Items							

Labor & Burden:

Survey	10.1	3	3				
Workshop	10.2	3	6	6	6		
Design	10.3		3	3	3	3	3
Information							

Consultants:

<u>Center Costs:</u>	7	14	11	11	4	4
----------------------	---	----	----	----	---	---

Other Direct Costs:

Survey	10.1	6	6			
Design	10.3		6	6	6	6

<u>Total Other Costs:</u>	6	12	6	6	6	6
---------------------------	---	----	---	---	---	---

<u>Total Cost (Units):</u>	13	26	17	17	10	10
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	118	237	155	155	91	91
------------------------------	-----	-----	-----	-----	----	----

Market Sector: IPH Technology: Thermal Category: Market Development

Program: (11) IPH Consumer Financial Assistance

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Information			1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Needs	11.1	3	1				
Packaging	11.2		3	3			
Information	11.3		2	3	3	3	3
Lender	11.4		3	3	3	3	3
Consumer			3	3	3	3	3
<u>Consultants:</u>							
<u>Center Costs:</u>		3	13	13	10	10	10
<u>Other Direct Costs:</u>							
Packaging	11.2		3	3	3	3	3
<u>Total Other Costs:</u>			3	3	3	3	3
<u>Total Cost (Units):</u>		3	16	16	16	16	16
<u>Total Cost (Dollars):</u>		27	146	146	146	146	146

Market Sector: IPH Technology: Thermal Category: Market Development

Program: (12) Solar Promotion & Consumer Assistance

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Advertising	12.2	1	1	2	3	3	3
Sub-contract Items							
<u>Labor & Burden:</u>							
Assistance	12.1		3	6	9	12	12
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>			4	8	12	15	15
<hr/>							
<u>Other Direct Costs:</u>							
<hr/>							
<u>Total Other Costs:</u>							
<hr/>							
<u>Total Cost (Units):</u>			4	8	12	15	15
<hr/>							
<u>Total Cost (Dollars):</u>			36	73	109	137	137

Market Sector: IPH Technology: Thermal Category: I & LB

Program: (13) Government Coordination

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Coordination	13.1	3	6	9	12	12	12
<u>Consultants:</u>							
<u>Center Costs:</u>		3	6	9	12	12	12
<u>Other Direct Costs:</u>							
<u>Total Other Costs:</u>							
<u>Total Cost (Units):</u>		3	6	9	12	12	12
<u>Total Cost (Dollars):</u>		37	55	82	109	109	109

Market Sector: IDH Technology: Thermal Category: I & LB

Program: (14) Tax

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Tax Study	14.1	6	6			
Model	14.2			6	6	
Council	14.3		3	3	3	3
Dissemination	14.4		3	3	3	3

Consultants:

Center Costs:

6	12	12	12	6	6
---	----	----	----	---	---

Other Direct Costs:

Study	9.2	6	6
-------	-----	---	---

Total Other Costs:

6	6
---	---

Total Cost (Units):

12	18	12	12	12	12
----	----	----	----	----	----

Total Cost (Dollars):

109	164	109	109	109	109
-----	-----	-----	-----	-----	-----

Market Sector: IPH Technology: Thermal Category: Market Development

Program: (15) Legislation

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Study	15.1	3	3	3	3	3
Model		3	3			
Full Allocation	15.2	6				

Consultants:

<u>Center Costs:</u>	12	12	3	3	3	3
----------------------	----	----	---	---	---	---

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	12	12	3	3	3	3
----------------------------	----	----	---	---	---	---

<u>Total Cost (Dollars):</u>	109	109	27	27	27	27
------------------------------	-----	-----	----	----	----	----

Market Sector: IPH Technology: Thermal Category: I & LB

Program: (16) Legal and Regulatory

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Assessment	16.1	6	6	6	6	6	6
Dissemination	16.2		3	3	3	3	3

Consultants:

<u>Center Costs:</u>	6	9	9	9	9	9
----------------------	---	---	---	---	---	---

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	6	9	9	9	9	9
----------------------------	---	---	---	---	---	---

<u>Total Cost (Dollars):</u>	55	82	82	82	82	82
------------------------------	----	----	----	----	----	----

Market Sector: IPH Technology: Thermal Category: I & LB

Program: (17) State and Local Government Interface

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

State	3	6	9	9	9	9
Local				3	3	3

Consultants:

<u>Center Costs:</u>	3	6	9	12	12	12
----------------------	---	---	---	----	----	----

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	3	6	9	12	12	12
----------------------------	---	---	---	----	----	----

<u>Total Cost (Dollars):</u>	27	55	82	109	109	109
------------------------------	----	----	----	-----	-----	-----

Market Sector: IPH Technology: Thermal Category: I & LB

Program: (18) Federal Government Interface

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

18.1	3	6	9	12	12	12
------	---	---	---	----	----	----

Consultants:

<u>Center Costs:</u>	3	6	9	12	12	12
----------------------	---	---	---	----	----	----

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	3	6	9	12	12	12
----------------------------	---	---	---	----	----	----

<u>Total Cost (Dollars):</u>	27	55	82	109	109	109
------------------------------	----	----	----	-----	-----	-----

Market Sector: IPH Technology: Thermal Category: Product Development

Program: (19) Technology Development Coordination

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Coordination	19.1	3	6	9	12	12	12
--------------	------	---	---	---	----	----	----

Consultants:

Center Costs:

3	6	9	12	12	12
---	---	---	----	----	----

Other Direct Costs:

Total Other Costs:

Total Cost (Units):

3	6	9	12	12	12
---	---	---	----	----	----

Total Cost (Dollars):

27	55	82	109	109	109
----	----	----	-----	-----	-----

Market Sector: IPH Technology: Thermal Category: Product Development

Program: (20) Target Industry Design

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Analysis	20.1	3	6	6	6	6	6
Model	20.2	3	6	6	6	6	6
<u>Consultants:</u>							
<u>Center Costs:</u>		6	12	12	12	12	12
<u>Other Direct Costs:</u>							
Competition	20.3	3	3	3	3	3	3
<u>Total Other Costs:</u>		3	3	3	3	3	3
<u>Total Cost (Units):</u>		9	15	15	15	15	15
<u>Total Cost (Dollars):</u>		82	137	137	137	137	137

Market Sector: IPH Technology: Thermal Category:

Program: (21) Demonstration

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Management	21.1	3	6	12	12	12	12
Analysis	21.2		3	3	6	6	6
Promotion	21.3				3	3	3

Consultants:

<u>Center Costs:</u>	3	9	15	21	21	21
----------------------	---	---	----	----	----	----

Other Direct Costs:

Demo	21.4	10	15	25	150	300	400
------	------	----	----	----	-----	-----	-----

<u>Total Other Costs:</u>	10	15	25	150	300	400
---------------------------	----	----	----	-----	-----	-----

<u>Total Cost (Units):</u>	13	24	40	171	321	421
----------------------------	----	----	----	-----	-----	-----

<u>Total Cost (Dollars):</u>	118	218	364	1,465	2,921	3,837
------------------------------	-----	-----	-----	-------	-------	-------

Market Sector: IPH Technology: Thermal Category: Product Development

Program: (22) Demonstration and Data Support

Task No.	1980 Units	1981 Units	1982 Units	1983 Units	1984 Units	1985 Units
-------------	---------------	---------------	---------------	---------------	---------------	---------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Analysis	22.1	3	6	9	12	12
Information	22.2		3	6	6	6
Testing			3	6	6	6

Consultants:

Center Costs:	3	12	24	24	24
---------------	---	----	----	----	----

Other Direct Costs:

Monitor Equip.	3	6	9	12	12
Test	10	7	3		

Total Other Costs:	13	13	12	12	12
--------------------	----	----	----	----	----

Total Cost (Units):	16	25	36	36	36
---------------------	----	----	----	----	----

Total Cost (Dollars):	146	228	328	328	328
-----------------------	-----	-----	-----	-----	-----

Market Sector: IPH Technology: Thermal Category: Product Development

Program: (23) Product/Process Redesign

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Development	23.1	6	6	6	6	6
Analysis	23.2	6	6	6	6	6
Marketing	23.3	3	3	3	3	3
Workshop	23.4		3	3	3	3

Consultants:

<u>Center Costs:</u>	15	18	18	18	18
----------------------	----	----	----	----	----

Other Direct Costs:

Workshop	23.4	3	3	3	3
Analysis	23.2		100	100	100

<u>Total Other Costs:</u>		3	103	103	103
---------------------------	--	---	-----	-----	-----

<u>Total Cost (Units):</u>	15	21	121	121	121
----------------------------	----	----	-----	-----	-----

<u>Total Cost (Dollars):</u>	137	192	1,102	1,102	1,102
------------------------------	-----	-----	-------	-------	-------

Market Sector: IPH Technology: Wood Biomass Category: Product Development

Program: (24) Woody Biomass

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Survey	24.1	3				
Teams	24.2	3	3	3		

Consultants:

<u>Center Costs:</u>	6	3	3
----------------------	---	---	---

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	6	3	3
----------------------------	---	---	---

<u>Total Cost (Dollars):</u>	55	27	27
------------------------------	----	----	----

AGRICULTURAL SECTOR

PROGRAM COSTS

Market Sector: Agriculture Technology: All Category: Market Development

Program: (1) Energy Consumption Survey

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Consultants:

Center Costs:

Other Direct Costs:

Total Other Costs:

Total Cost (Units):

Total Cost (Dollars):

Market Sector: Agriculture Technology: All Category: Market Development

Program: (2) Thermodynamic Needs Assessment

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Materials		3	3	3	3	3	3
Sub-contract Items							
<u>Labor & Burden:</u>							
Survey	2.1	12	12	12	12	12	12
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		15	15	15	15	15	15
<u>Other Direct Costs:</u>							
		36	72	72	72	72	72
<hr/>							
<u>Total Other Costs:</u>		36	72	72	72	72	72
<hr/>							
<u>Total Cost (Units):</u>		51	87	87	87	87	87
<hr/>							
<u>Total Cost (Dollars):</u>		464	792	792	792	792	792

Market Sector: Agriculture Technology: All Category: Market Development

Program: (3) Energy Resource Survey

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Survey	3.1	6	6	6	6	6	6
--------	-----	---	---	---	---	---	---

Consultants:

<u>Center Costs:</u>	6	6	6	6	6	6
----------------------	---	---	---	---	---	---

Other Direct Costs:

Survey	3.1	36	72	72	72	72	72
--------	-----	----	----	----	----	----	----

<u>Total Other Costs:</u>	36	72	72	72	72	72
---------------------------	----	----	----	----	----	----

<u>Total Cost (Units):</u>	42	78	78	78	78	78
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	382	710	710	710	710	710
------------------------------	-----	-----	-----	-----	-----	-----

Market Sector: Agriculture Technology: All Category: Market Development

Program: (4) Energy Models Development

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Model	4.1	12	12	12	12	12	12
-------	-----	----	----	----	----	----	----

Consultants:

<u>Center Costs:</u>	12	12	12	12	12	12
----------------------	----	----	----	----	----	----

Other Direct Costs:

Model	4.1	12	12	12	12	12
-------	-----	----	----	----	----	----

<u>Total Other Costs:</u>	12	12	12	12	12	12
---------------------------	----	----	----	----	----	----

<u>Total Cost (Units):</u>	24	24	24	24	24	24
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	218	218	218	218	218	218
------------------------------	-----	-----	-----	-----	-----	-----

Market Sector: Agriculture Technology: A1 Category: ITD

Program: (5) Advisory Council

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Council	5.1	3	3	3	3	3	3
---------	-----	---	---	---	---	---	---

Consultants:

<u>Center Costs:</u>	3	3	3	3	3	3
----------------------	---	---	---	---	---	---

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	3	3	3	3	3	3
----------------------------	---	---	---	---	---	---

<u>Total Cost (Dollars):</u>	27	27	27	27	27	27
------------------------------	----	----	----	----	----	----

Market Sector: Agriculture Technology: All Category: Market Development

Program: (6) Institutional Barriers

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Collect Data	6.1	12	12	12	12	12	12
Complete Data		6	6	6	6	6	6
Training Dev.		6	6	6	6	6	6

Consultants:

<u>Center Costs:</u>	24	24	24	24	24	24
----------------------	----	----	----	----	----	----

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	24	24	24	24	24	24
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	218	218	218	218	218	218
------------------------------	-----	-----	-----	-----	-----	-----

Market Sector: Agriculture Technology: All Category: Market Development

Program: (7) Finance Needs Assessment

Task No.	1980 Units	1981 Units	1982 Units	1983 Units	1984 Units	1985 Units
-------------	---------------	---------------	---------------	---------------	---------------	---------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Survey	7.1	3	3	3	3		
Assess	7.1	3	3	3	3	3	3
Gov't. Interface	7.1		3	3	3	3	3

Consultants:

Center Costs:	6	9	9	9	6	6
---------------	---	---	---	---	---	---

Other Direct Costs:

Total Other Costs:

Total Cost (Units):	6	9	9	9	6	6
---------------------	---	---	---	---	---	---

Total Cost (Dollars):	55	91	91	91	55	55
-----------------------	----	----	----	----	----	----

Market Sector: Agriculture Technology: All Category: Market Development

Program: (8) Information Dissemination

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Material	8.2	3	6	6	6	6	6
Sub-contract Items							

Labor & Burden:

Program Dev.	8.2	6	6	6	6	6	6
Survey	8.1	3	3	3	3		

Consultants:

<u>Center Costs:</u>	12	15	15	15	12	12
----------------------	----	----	----	----	----	----

Other Direct Costs:

<u>Total Other Costs:</u>	12	15	15	15	12	12
---------------------------	----	----	----	----	----	----

<u>Total Cost (Units):</u>	109	137	137	137	109	109
----------------------------	-----	-----	-----	-----	-----	-----

Total Cost (Dollars):

Market Sector: Agriculture Technology: All Category: Market Development

Program: (9) Educational Training

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Publish		1	1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Package Dev.		6	6	6	6	6	6
Workshops		6	6	6	6	6	6
<u>Consultants:</u>							
<u>Center Costs:</u>		13	13	13	13	13	13
<u>Other Direct Costs:</u>							
<u>Total Other Costs:</u>		13	13	13	13	13	13
<u>Total Cost (Units):</u>		118	118	118	118	118	118
<u>Total Cost (Dollars):</u>							

Market Sector: Agriculture Technology: All Category: IID

Program: (10) Financial Information Transfer

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Analysis	12	12	12	12	12	12
Info. Transfer		12	12	12	12	12

Consultants:

<u>Center Costs:</u>	12	24	24	24	24	24
----------------------	----	----	----	----	----	----

Other Direct Costs:

Analysis	6	6	6	6	6	6
Transfer	6	6	6	6	6	6

<u>Total Other Costs:</u>	12	12	12	12	12	12
---------------------------	----	----	----	----	----	----

<u>Total Cost (Units):</u>	24	36	36	36	36	36
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	218	328	328	328	328	328
------------------------------	-----	-----	-----	-----	-----	-----

Market Sector: Agriculture Technology: All Category: Market Development

Program: (11) Market Analysis Crop Drying

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Survey	3	3	3
Transfer	3	3	3

Consultants:

<u>Center Costs:</u>	6	6	6
----------------------	---	---	---

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	6	6	6
----------------------------	---	---	---

<u>Total Cost (Dollars):</u>	55	55	55
------------------------------	----	----	----

Market Sector: Agriculture Technology: All Category: Market Development

Program: (12) Market Analysis - SWECS

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Materials			1	1	1	1	1
Sub-contract Items							
<u>Labor & Burden:</u>							
Gather Info.	12.1	3	3	3			
Analyze	12.1	6	6	6	6	6	6
Disseminate	12.1		3	3	3	3	3
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		9	13	13	13	13	13
<hr/>							
<u>Other Direct Costs:</u>							
<hr/>							
<u>Total Other Costs:</u>							
<hr/>							
<u>Total Cost (Units):</u>		9	13	13	13	13	13
<hr/>							
<u>Total Cost (Dollars):</u>		82	118	118	118	118	118

Market Sector: Agriculture Technology: Thermal Category: Market Development

Program: (13) Crop Drying Demonstrations

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Survey	3	3	3			
Design Dev.	6	6	6			
Demonstration		3	3	6	6	6

Consultants:

<u>Center Costs:</u>	9	12	12	6	6	6
----------------------	---	----	----	---	---	---

Other Direct Costs:

Demonstrations		10	25	50	75	100
----------------	--	----	----	----	----	-----

<u>Total Other Costs:</u>		10	25	50	75	100
---------------------------	--	----	----	----	----	-----

<u>Total Cost (Units):</u>	9	22	47	56	81	106
----------------------------	---	----	----	----	----	-----

<u>Total Cost (Dollars):</u>	82	200	428	510	737	965
------------------------------	----	-----	-----	-----	-----	-----

Market Sector: Agriculture Technology: Passive Category: Market Development

Program: (14) Urban Greenhouse Demonstration

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Solicit Prop.	14.1	3	3	3
Demonstration		3	3	3

Consultants:

<u>Center Costs:</u>	6	6	6
----------------------	---	---	---

Other Direct Costs:

Demonstrations	5	10	10
----------------	---	----	----

<u>Total Other Costs:</u>	5	10	10
---------------------------	---	----	----

<u>Total Cost (Units):</u>	11	16	16
----------------------------	----	----	----

<u>Total Cost (Dollars):</u>	100	146	146
------------------------------	-----	-----	-----

Market Sector: Agriculture Technology: Thermal Category: Market Development

Program: (15) Dairy Hot Water Demonstration

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Solicit Proposal	3	3	3
------------------	---	---	---

Manage	3	3	3
--------	---	---	---

Consultants:

<u>Center Costs:</u>	6	6	6
----------------------	---	---	---

Other Direct Costs:

Design	4	4	4
--------	---	---	---

Demonstrations	6	6	6
----------------	---	---	---

<u>Total Other Costs:</u>	10	10	10
---------------------------	----	----	----

<u>Total Cost (Units):</u>	16	16	16
----------------------------	----	----	----

<u>Total Cost (Dollars):</u>	146	146	146
------------------------------	-----	-----	-----

Market Sector: Agriculture Technology: Passive Category: Market Development

Program: (16) Livestock - Bird Shelters Demonstration

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Survey		3	3	3	3	3	3
Manage		3	3	3	3	3	3
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		6	6	6	6	6	6
<hr/>							
<u>Other Direct Costs:</u>							
Demonstrations		6	6	6	6	6	6
<hr/>							
<u>Total Other Costs:</u>		6	6	6	6	6	6
<hr/>							
<u>Total Cost (Units):</u>		12	12	12	12	12	12
<hr/>							
<u>Total Cost (Dollars):</u>		109	109	109	109	109	109

Market Sector: Agriculture Technology: Thermal Category: Market Development

Program: (17) Farm IPH Demonstration

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Survey	3	3	3			
Manage		3	3	3	1	1

Consultants:

<u>Center Costs:</u>	3	6	6	3	1	1
----------------------	---	---	---	---	---	---

Other Direct Costs:

	20	20	20			
--	----	----	----	--	--	--

<u>Total Other Costs:</u>		20	20	20		
---------------------------	--	----	----	----	--	--

<u>Total Cost (Units):</u>	3	26	26	23	1	1
----------------------------	---	----	----	----	---	---

<u>Total Cost (Dollars):</u>	27	237	237	209	9	9
------------------------------	----	-----	-----	-----	---	---

Market Sector: Agriculture Technology: Biomass Category: Market Development

Program: (18) Direct Combustion Demonstration

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Survey	3	3	3			
Manage	3	3	3	6	6	6

Consultants:

<u>Center Costs:</u>	6	6	6	6	6	6
----------------------	---	---	---	---	---	---

Other Direct Costs:

Study	3	3	3	3	3	3
		10	10	20	20	20

<u>Total Other Costs:</u>	3	13	13	23	23	23
---------------------------	---	----	----	----	----	----

<u>Total Cost (Units):</u>	9	19	19	29	29	29
----------------------------	---	----	----	----	----	----

<u>Total Cost (Dollars):</u>	82	173	173	264	264	264
------------------------------	----	-----	-----	-----	-----	-----

Market Sector: Agriculture Technology: Wind Category: Market Development

Program: (19) Small Wind Demonstration

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Proposals		3	3	3	3	3	3
Manage		6	6	6	6	6	6
Promote		3	3	3	3	3	3
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		12	12	12	12	12	12
<hr/>							
<u>Other Direct Costs:</u>							
Design		6	6	6			
Demonstration			10	20	150	200	200
<hr/>							
<u>Total Other Costs:</u>		6	16	26	150	200	200
<hr/>							
<u>Total Cost (Units):</u>		18	28	38	162	212	212
<hr/>							
<u>Total Cost (Dollars):</u>		164	255	346	1,474	1,929	1,929

Market Sector: Agriculture Technology: Wind Category: Product Demonstration

Program: (20) Small Wind/Utility Interface Study

<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
---------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Survey	3	3	3	3	3	3
Integrate	3	3	3	3	3	3

Consultants:

<u>Center Costs:</u>	6	6	6	6	6	6
----------------------	---	---	---	---	---	---

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	6	6	6	6	6	6
----------------------------	---	---	---	---	---	---

<u>Total Cost (Dollars):</u>	55	55	55	55	55	55
------------------------------	----	----	----	----	----	----

Market Sector: Agriculture Technology: Wind Category: Market Development

Program: (21) Large Wind Demonstration

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Proposals			3	3			
Manage			3	6	12	12	12
<u>Consultants:</u>							
<u>Center Costs:</u>							
		6	9	12	12	12	
<u>Other Direct Costs:</u>							
Demonstration					100	300	300
Design				20	20		
<u>Total Other Costs:</u>							
			20	120	300	300	
<u>Total Cost (Units):</u>							
		6	29	132	312	312	
<u>Total Cost (Dollars):</u>							
		55	264	1,201	2,839	2,839	

Market Sector: Agriculture Technology: Fuels Category: Market Development

Program: (22) Farm Ethanol Demonstration

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Publish			1				
Sub-contract Items							
<u>Labor & Burden:</u>							
Survey		6	6				
Evaluate			6	12	12	12	12
Manage			6	6	6	6	6
<u>Consultants:</u>							
<hr/>							
<u>Center Costs:</u>		6	19	18	18	18	18
<hr/>							
<u>Other Direct Costs:</u>							
Demonstration			10	25	150	175	200
<hr/>							
<u>Total Other Costs:</u>			10	25	150	175	200
<hr/>							
<u>Total Cost (Units):</u>		6	29	43	168	193	218
<hr/>							
<u>Total Cost (Dollars):</u>		55	264	391	1,529	1,756	1,984

Market Sector: Agriculture Technology: Fuel Category: Market Development

Program: (23) Farm Methane Demonstration

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Survey		3	3				
Manage		3	3	6	6	6	6
<u>Consultants:</u>							
<u>Center Costs:</u>		6	6	6	6	6	6
<u>Other Direct Costs:</u>							
Demonstration			10	25	50	75	100
<u>Total Other Costs:</u>			10	25	50	75	100
<u>Total Cost (Units):</u>		6	16	31	56	81	106
<u>Total Cost (Dollars):</u>		55	146	282	510	737	965

Market Sector: Agriculture Technology: All Category: Market Development

Program: (24) Consumer Protection

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Monitor	3	3	3	3	3	3
Assist	9	9	9	9	9	9

Consultants:

<u>Center Costs:</u>	12	12	12	12	12	12
----------------------	----	----	----	----	----	----

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	12	12	12	12	12	12
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	109	109	109	109	109	109
------------------------------	-----	-----	-----	-----	-----	-----

UTILITY SECTOR

PROGRAM COSTS

Market Sector: Utilities Technology: All Category: Market Development

Program: (1) Energy Cost/Value Assessment

	<u>Task No.</u>	<u>1980 Units</u>	<u>1981 Units</u>	<u>1982 Units</u>	<u>1983 Units</u>	<u>1984 Units</u>	<u>1985 Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Analysis		12	12	12	12	12	12
<u>Consultants:</u>							
<u>Center Costs:</u>		12	12	12	12	12	12
<u>Other Direct Costs:</u>							
Analysis		24	24	24	24	24	24
<u>Total Other Costs:</u>		24	24	24	24	24	24
<u>Total Cost (Units):</u>		36	36	36	36	36	36
<u>Total Cost (Dollars):</u>		337	337	337	337	337	337

Market Sector: Utilities Technology: All Category: Market Development

Program: (2) Public Power Utility Assessment

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Research	2.1	6	6	6	6	6
Data Base	2.2	3	3	3	3	3
Model	2.3	3	3	3	3	3
Lending Criteria	2.4-.5	3	3	3		
Implement	.6-.7	6	6	6	6	6

Consultants:

<u>Center Costs:</u>	21	21	21	21	18	18
----------------------	----	----	----	----	----	----

Other Direct Costs:

Total Other Costs:

<u>Total Cost (Units):</u>	21	21	21	21	18	18
----------------------------	----	----	----	----	----	----

<u>Total Cost (Dollars):</u>	191	191	191	191	164	164
------------------------------	-----	-----	-----	-----	-----	-----

Market Sector: Utilities Technology: Biomass Category: Market Development

Program: (3) Liquid & Gaseous Fuels from Municipal Waste

	<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
<u>Direct Material:</u>							
Purchased Parts							
Sub-contract Items							
<u>Labor & Burden:</u>							
Inventory	3.1	3	3	3			
Research	3.2	12	12	12	12	12	12
Environment	3.3	3	3	3	3	3	3
Integration	3.4	6	6	6	6	6	6
Demo Manage	3.5	6	12	12	12	12	12
<u>Consultants:</u>							
<u>Center Costs:</u>		30	36	36	33	33	33
<u>Other Direct Costs:</u>							
Demonstration			50	100	350	400	400
<u>Total Other Costs:</u>			50	100	350	400	400
<u>Total Cost (Units):</u>		30	86	136	383	433	433
<u>Total Cost (Dollars):</u>		273	783	1,238	3,485	3,940	3,940

Market Sector: Utilities Technology: All Category: _____

Program: (4) Energy Independent Farm

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Consultants:

Center Costs:

Other Direct Costs:

Total Other Costs:

Total Cost (Units):

Total Cost (Dollars):

Market Sector: Utilities Technology: Wind Category: Product Definition

Program: (5) Wind/Hydrogen Storage

<u>Task</u> <u>No.</u>	<u>1980</u> <u>Units</u>	<u>1981</u> <u>Units</u>	<u>1982</u> <u>Units</u>	<u>1983</u> <u>Units</u>	<u>1984</u> <u>Units</u>	<u>1985</u> <u>Units</u>
---------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------	-----------------------------

Direct Material:

Purchased Parts

Sub-contract
Items

Labor & Burden:

Survey	5.1	6	3			
Design	5.2	6	6			
Cost	5.3	3	3			
Proposal	5.4		3			
Demonstration			3	3	3	3

Consultants:

Center Costs:

15	18	3	3	3	3
----	----	---	---	---	---

Other Direct Costs:

Demonstration	10	10	10	10	10
---------------	----	----	----	----	----

Total Other Costs:

10	10	10	10	10
----	----	----	----	----

Total Cost (Units):

15	28	13	13	13	13
----	----	----	----	----	----

Total Cost (Dollars):

137	255	118	118	118	118
-----	-----	-----	-----	-----	-----