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ABSTRACT

In Spring 1997, Maui Community College (MCC), in Hawaii, conducted a survey of Maui businesses to determine perceived needs for a certificate or associate degree program in sustainable technologies. Questionnaires were mailed to 500 businesses, including building, electrical, and plumbing contractors, architects, waste disposal, power generators, agricultural concerns, automotive repairers, and hotels. They sought information on the anticipated level and configuration of job openings within the next 5 years; types of inservice training, wages, and class scheduling accessibility. Study findings, based on 54 completed questionnaires, included the following: (1) the projected need for hiring new employees with sustainable technologies skills is about 22.8 per year over the next 5 years (totaling 114 hires); (2) three sectors, electrical contractors, plumbing, and hotels, will generate most of the jobs; (3) the starting wage for sustainable technologies hires was considerably above minimum wage, at least \$8 per hour, with half of the companies promising \$15 or more per hour; (4) inservice demand was high; (5) the best time for classes is evenings. The study concluded that there is a need for a sustainable technologies program with a capacity for training 16-20 students per year. The cover letter, survey instrument, and employer comments are attached. (ECF)

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Needs Assessment for Education in Sustainable Technologies in Maui

Jean A. Pezzoli

Maui Community College

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NEEDS ASSESSMENT FOR EDUCATION IN SUSTAINABLE TECHNOLOGIES ON MAUI

Maui Community College
Spring 1997

TABLE OF CONTENTS

Section I

Purpose
Methodology
Results
Synopsis

Section II

Responder Comments

Section III

Appendix A: Survey Developers
Appendix B: Questionnaire

NEEDS ASSESSMENT FOR EDUCATION IN SUSTAINABLE TECHNOLOGIES ON MAUI

Maui Community College
Spring 1997

PURPOSE

The purpose of this survey was to ascertain the potential demand for pre-service and in-service training in Sustainable Technologies over the next five years from related businesses on Maui. The primary research question is whether the extent of employment demand justifies the development and initiation of a certificate or degree program in Maui Community College Sustainable Technologies (MIST). A secondary objective is to evaluate several programming aspects including content and time for classes.

METHODOLOGY

In the Spring 1997 semester the Survey Development Team (Appendix A) including the MIST Advisory Committee, MIST Coordinator, Director of Rural Community Leadership Program, and the Assistant Dean of Instruction, under auspices of the Dean of Instruction, developed and fieldtested a needs assessment questionnaire (Appendix B).

In April 1997, the questionnaire was mailed to 80 businesses randomly selected from relevant categories of the yellow pages of the 1996-97 Maui telephone directory. The initial return of 27 respondents was too small to draw reliable conclusions. A second mailing list was extracted from the yellow pages, using all businesses in the relevant categories. The list cut across a broad spectrum of businesses, including building, electrical, and plumbing contractors, architects, waste disposal, power generators, agriculture, automotive repairers, and hotels. The sampling strategy was to poll the full population of potential Maui businesses which might in the next five years hire employees with Sustainable Technologies skill, to gain a complete picture of the potential community demand from all relevant employment sectors.

The number of respondents was 54 overall. This represents a return rate of 12.2 percent (500 mailouts less 57 returned for insufficient address = 443 sample size). (Note: All 443 recipients would not be expected to reply because the inclusive sampling strategy, by its nature, includes many for whom the survey does not apply.)

RESULTS

A. Employment Demand

The survey item dealing with potential employment demand from the community for persons with SusTech skill asked, "In the next five years, how many staff with Sustainable Technologies skill do you expect to hire?" Results to this item are displayed in Table 1 and discussed below.

Table 1
Anticipated Demand for SusTech Employees

Sector (No.)	Exp'd Hires	Expansion	Replacement	Firms Hiring
Building (7)	3	0	3	2
Electrical (12)	36	17	19	8
Plumbing (6)	22	16	6	6
Architects (4)	4	2	2	2
Power (3)	3	2	1	1
Hotels (11)	25	0	25	7
Auto (3)	6	2	4	2
Misc (8)	15	14	1	6
Total (54)	114	53	61	34

Number of Hires. Applicants with Sustainable Technologies skill are, in fact, needed in the near future according to the survey. Respondents expect to hire a collective total of 114 persons with SusTech skill within the next five years.

A five-year demand for 114 new employees computes to an "annual" projected need for 22.8 new hires a year (114 divided by 5 = 22.8). This number compares favorably to the potential capacity of a MIST program for preparing 16-20 new employees per year (with a class size of 16-20 students).

(Note: Extrapolation that the employment demand is greater than 23 is not appropriate in this methodology, since the entire population -- and not just a sample -- of potential employers on Maui was surveyed.)

Number of Hiring Companies. An interesting result comes from inspecting the high concentration of affirmative responses to this item. Of the 54 businesses completing the questionnaire, 34 responded affirmatively that they would hire additional staff with SusTech skill over the next five years. That is, two-thirds of the responding companies expect to hire in this area in the immediate future.

Replacement vs. Expansion. Expansion accounts for about half (53, 46%) of the anticipated hires, and replacement for the other half (61, 54%). Despite a recent downturn of the economy, some companies are expecting expansion in this area.

Type of Hiring Companies. Where might persons with SusTech skill find jobs? Table 1 answers this question by breaking out the responses by business sector. All sectors surveyed expect to hire new SusTech employees.

Three sectors will demand large numbers of new hires: Electrical contractors (36), Plumbing (22), and Hotels (25). This result suggests a focus for the curriculum. It is also interesting to note that these three sectors will generate jobs for different reasons: Plumbing requiring persons primarily for Expansion; Hotels primarily for Replacement; and Electrical requiring Expansion and Replacement almost equally.

B. Hourly Wage for SusTech Hires

The questionnaire also asked companies planning to hire employees with SusTech skill what wage they are willing to pay. This result is summarized by Table 2.

Table 2
Hourly Wage for New Hires with SusTech Skill

Sector (No.)	min(\$5.25)	\$5.30-8.00	\$8 - 15	\$15 - 25	\$25 +
Building	0	0	2	2	0
Electrical	0	0	4	5	4
Plumbing	0	0	3	2	1
Architects	0	0	1	2	0
Power	0	0	1	0	0
Hotels	0	0	5	3	4
Auto	0	0	1	1	0
Misc	0	0	6	0	0
Total (47)	0	0	23	15	9
Percent	--	--	49%	32%	19%

A minimum wage was proposed by none of the companies anticipating to hire persons with SusTech skill, nor was a wage ranging between \$5.30 and \$8.00 per hour. All respondents professed at least \$8.00 per hour as a starting wage. Indeed, more than half (51%) claimed as much as \$15 or more per hour. In fact, nine companies (19%) claimed they would start SusTech employees at \$25 per hour, or more. The MIST program has the potential for preparing students for high-end jobs.

Hotels and Electrical Firms to Pay the Most. The two dominant sectors proposing \$25 + per hour were Hotels and Electrical contractors.

There is variability within the sectors, however. For example, some hotels would start SusTech hires at \$25 per hour, while about the same number of hotels would start them at half that rate. The variability may reflect the diverseness of companies that serve the small population base on Maui, or possibly a less than static economic situation. The response rate to this item is also relatively low, which could account for some of the apparent variability.

C. Differential Wage Paid for Sustainable Technologies Skill or Formal Training

Another question assessed whether companies do or would pay a differential wage to employees with SusTech skill or with formal SusTech training; and if so, then how much is the differential. Table 3a summarizes the responses regarding SusTech skill, and Table 3b summarizes those for SusTech training.

Seventeen (17, 32%) companies stated that they would pay a differential wage for SusTech skill, and 25 (46%) said they would not. Twelve (12) companies left an item blank because to them the item may not have been applicable, or because they were not willing to reveal their intention. (Note: As before, no importance can be placed on the large number leaving an item blank because of the strategy to include every possible business on Maui that might need SusTech employees, thus enhancing the opportunity to include "not applicable" in the sample.)

As for formal SusTech training, there were seventeen (17, 32%) respondents who said they would pay a differential wage. Another 23 (43%) said they would not. And 14 respondents left the item blank.

Companies Giving Wage Differential. SusTech skill would lead to better wage in most sectors. Only the three responding Power companies failed to quote a differential, with one citing the union contract. As for SusTech training, data were about the same.

Wage Differential Amount. The differential amount varied considerably across companies. Although \$1-2 extra was the norm, some would pay up to \$4 more per hour for SusTech skilled/trained employees.

Table 3a
Differential Wage for SusTech Skill

Sector (No.)	Yes	No	Blank/NA	Per Hour More
Building (7)	2	4	1	\$2
Electrical (12)	4	5	3	\$2, 1, 1, 1 NA: based on skill level.
Plumbing (6)	3	1	2	Y: depends.
Architects (4)	2	2	--	\$0.50
Power (3)	--	2	1	N: not allowed under ILWU contract.
Hotels (11)	1	8	2	N: probably not.
Auto (3)	2	1	--	\$3
Misc (8)	3	2	3	\$2, N: cannot.
Total (54)	17	25	12	
Percent	32%	46%	22%	

Table 3b
Differential Wage for SusTech Training

Sector (No.)	Yes	No	Blank/NA	Per Hour More
Building (7)	2	4	1	\$2
Electrical (12)	5	5	2	\$4, 2, 1, 2, NA: based on skill level.
Plumbing (6)	3	--	3	Y: depends.
Architects (4)	1	2	1	\$0.50
Power (3)	--	2	1	N: not allowed under ILWU contract.
Hotels (11)	1	7	3	N: probably not.
Auto (3)	2	1	--	\$3
Misc (8)	3	2	3	\$2; 15-20%
Total (54)	17	23	14	
Percent	32%	43%	26%	

D. Preference Given for SusTech Skill in Hiring, Promoting, or Retaining Employees

Whether companies are willing to give preference to SusTech skill in hiring, promoting, or retaining employees was assessed and reported in Table 4 below.

A clear preference is found for SusTech skill in personnel actions. Preference was cited by more than two-thirds (69%) of those responding, and the preference was found in all sectors. One reservation some businesses expressed is that they would give preference only if other job skills are also good.

**Table 4
Preference Given in Hiring, Promoting, or Retaining SusTech Employees**

Sector (No.)	Yes	No	Blank	Specify *
Building (7)	3	3	1	
Electrical (12)	9	3	--	a, b, c, d
Plumbing (6)	5	--	1	e, f
Architects (4)	4	--	--	
Power (3)	3	--	--	g
Hotels (11)	6	2	3	h, i
Auto (3)	2	1	--	
Misc (8)	5	1	2	j
Total (54)	37	10	7	
Percent	69%	19%	13%	

*Specify --

- | | |
|--|--|
| (a) Y: I sure would. | (f) Y: depends on job opportunities. |
| (b) N: must be multi-talented just to have a job.
This would be in the "total persons package." | (g) Y: if they better meet job requirements. |
| (c) Y: if other trade proficiency level was also good. | (h) Y: all other being same. |
| (d) Y: hands on knowledge skills. | (i) Y: hiring/promoting. |
| (e) Y: if applicable. | (j) Y: possibly. |

E. Demand for In-Service Training

Another reason for a MIST program, in addition to the primary goal of pre-service training to prepare workers with Sustainable Technologies skill, is to provide in-service training and skill upgrading for employees already working in the field.

The survey assessed the employment demand for SusTech in-service training with Question #1, which asked respondents to estimate the number of employees in their firm (including themselves) who could benefit from courses in specific areas of Sustainable Technologies. Results to this item are summarized by Table 5.

The demand for in-service in Sustainable Technologies is quite large. Respondents claimed enough employees would benefit from taking SusTech courses to fill 597 seats.

High Demand In-Service Courses. The subject area with the strongest demand from respondents is Construction: New Materials and Methods. Respondents indicated a collective total of 103 employees who would benefit from training in this area.

Other subjects showing a strong demand are: Photovoltaic Design/Installation (90), Demand-Side Management (85), and Power Production/Management (94).

All other areas received interest as well.

Companies Generating In-Service Demand. The largest demand for in-service came from three sources: the 11 Hotels that completed the survey, suggesting enough employees would benefit from training to fill 137 seats; the three Power companies, also suggesting 137 seats; and the 12 Electrical contractors at 198 seats. These three sectors should be targeted for in-service training. The lowest demand came from Automotive (2).

Table 5
Number Employees Might Benefit from Sustainable Technologies Courses

Sector (No.)	Const Meth	Veh Fuel	Photo Volt	Solar Thrm	Bio mass	Wind Pwr	Wste Wtr	Dmnd Mgt	Pwr Prodn	Other	Over all
Building	18	2	1	1	--	2	2	--	--	--	26
Electrical	24	19	40	15	5	24	5	29	36	1	198
Plumbing	7	1	10	12	5	--	5	2	--	--	42
Architects	5	--	6	6	--	5	4	--	1	--	27
Power	15	14	25	10	15	14	2	10	32	--	137
Hotels	30	4	3	3	8	3	22	42	22	--	137
Auto	--	1	--	--	--	--	--	--	--	*1	2
Misc	4	3	5	3	3	2	3	2	3	--	28
Total	103	44	90	50	36	50	43	85	94	2	597

*Note.--Whenever a respondent x'd an item instead of indicating the "number" of employees who would benefit from a class, this analysis added "1" for the "x" in computing the total, even though the intended number of employees might be much higher. As such the actual totals may be higher than reflected.

**Note.--Other subject areas suggested were: Submetering-KWH/Water/gas (1); Automotive (1).

F. Recent Employee In-Service

Those surveyed were also asked to indicate whether they or their employees had received SusTech training within the past year, results of which are described in Table 6.

Table 6
Firms with Employees Receiving Sustainable Technologies Training

Sector	Topic(s)	No. Hr. per Employee	No. Employee	Where	Who
Electrical	Demand-side mgt, photovoltaic systems	10	3		
Electrical	Various Act energy Sys	6	1	Wailea	MECO
Electrical	Utility Workshops			MECO	MECO
Electrical	Code;elec competence			MCC	Wilhelm
Electrical	Electrician, computer	4		MCC	
Electrical	Electrical code			California	NFPA
Plumbing	--	40	1	Honolulu	USC
Architecture	Bamboo/cultivation & construction		1	Hilo	HC&S
Power	Demand-side mgt	24	5	Honolulu	Utility
Hotel	Demand-side mgt	4	10	Daily Mtgs	R.Hoonan, Dir Eng
Hotel	Electrical, water		4	on-site	MECO/Rocky Mountain Inst
Hotel	Recycle, electrical, demand mgt				
Auto	Automotive repairs	40	4	Los Angeles	Goodyear
Auto	Auto tech		4	Maui	MCC
Auto	Recycling wastes	.5	34	on-site	Owner
Misc.	Perma culture		10		

A very interesting disparity emerges by comparing responses to Tables 5 and 6. While many companies expressed the need for employees to have SusTech in-service, Table 6 shows few companies report having employees who actually received training in the past year. Replying in the affirmative were just 16 firms, about 30 percent of the respondents. Yet the 30 percent figure is higher than that found in other Needs Assessments conducted recently, reflecting a higher level of activity in the SusTech area.

Little of this training was provided by MCC. The sector reporting the most in-service was Electrical Contractors.

G. Best Time for In-Service Classes

The survey assessed the potentially best time for offering in-service classes with the item, "When would you or your employees most likely take advantage of courses in Sustainable Technologies? (Check all that apply.)" The results are tabulated below in Table 7.

Table 7
Best Times for In-Service Classes

No. companies selecting Mornings	8
No. companies selecting Afternoons	6
No. companies selecting Evenings	47
No. companies selecting Saturdays	19

Evening Classes. The preference for evening classes is quite clear-cut. Most respondents expressed interest for in-service classes scheduled in the evenings, with 47 companies responding favorably toward this.

Saturday Classes. Saturday classes were a far less popular option, with only 19 companies opting for this (and most of them checked the Evening option, too).

Morning Classes. The companies which said their employees are likely to take advantage of SusTech courses in the day numbered only eight.

Afternoon Classes. Afternoon classes received the least support, with only six (6) companies selecting this option (and most chose other times as well).

Clearly any Sustainable Technologies instruction at Maui Community College intended for in-service should take place in the evenings.

H. Commentary

One of the last questions queried participants on what prospective new occupations in SusTech are emerging on Maui. A wide array of suggestions were offered, including those researched in the survey, especially Solar, Demand-Side Management, and Photovoltaics. The reader is encouraged to read the verbatim comments recorded in the section: Responder Comments.

The final question was an open-ended item asking for "Other Comments." The few comments made are recorded in the Responder Comment section for reader perusal.

SYNOPSIS

A community needs assessment to ascertain the employment demand on Maui for persons with SusTech skill was distributed to 500 business firms in electrical, plumbing, building, power, waste disposal, agriculture, architects, hotels, and automotive repair. Results based on 54 respondents gave evidence that the projected need for hiring new employees with SusTech skill is about 22.8 per year over the next five years (totaling 114 hires). Roughly equal numbers are projected for expansion (53) and replacement (61). A conclusion of this finding was that the anticipated employment demand on Maui for SusTech employees (22.8 per year) justifies the need for a MIST program with a capacity for training 16-20 students per year.

The firms expecting to hire numbered 34 and they spread across all business sectors surveyed. Three sectors (Electrical Contractors, Plumbing, Hotels) will generate many of the jobs, suggesting a focus for the curriculum in these areas.

The starting wage for SusTech hires was considerably above the minimum wage, with all respondents regardless of sector professing at least \$8 per hour, and half promising \$15 or more per hour. Saying they would pay a differential wage for SusTech skill were 17 companies, the same number (17) for SusTech training. Even more companies expressed preference in the personnel decisions of hiring, promoting, or retaining to employees with SusTech skill -- in fact, two-thirds of those responding (37, 69%) expressed this preference.

The in-service demand was quite high, although the reported track record was low by comparison. Many respondents claimed employees would benefit from SusTech training, enough to fill more than 597 seats. But just 16 firms said their employees had taken related in-service in the past year. The expressed need for training cut across many sectors, with Hotels, Power companies, and Electrical contractors generating the largest single need. The subject area generating the most interest was Construction: New Materials and Methods, although interest was evident in all other areas as well. The best time for classes is evenings.

These results support development and initiation of a MIST program to address the employment need emerging across many sectors of pre-service and in-service training for high-end jobs on Maui.

RESPONDER COMMENTS

What prospective new areas/occupations in Sustainable Technologies are emerging on Maui?

BUILDING CONTRACTORS

Design of homes using sustainable tech -- design, materials and systems.

I cannot fill this out because I am not a company, but I commend you in your efforts to promote and educate the public in sustainable resources. All sounds interesting to me and I look forward to the growing curriculum at MCC, especially within the environmental field. Mahalo.

ELECTRICAL CONTRACTORS

Alternative Transportation (electric cars, biodiesel, methane gas).

We need solar like Barstow, California project on wind, maybe waves.

Solar Electricity Generation, Solar Water pumping.

Solar electrical production, electrical xx.

Cogen by hotels -- this is more of an alternative power source -- wind, biomass, solar.

Photovoltaics design/installation.

Applying Demand-Side Management to mid and large electrical consumers.

Not much.

Energy efficient power and lighting design, fiber optics, CAT S cabling.

PLUMBING AND MECHANICAL REFRIGERATION, AC

Solar water heating due to MECO rebate program.

Solar heating/biomass.

Photovoltaic technicians, Fuel cell technicians.

ARCHITECTS

Bamboo cultivation (Sp. Goadua Augustifolia) for structural construction material.

Recycling of usable building materials.

POWER GENERATORS

Solar Photovoltaic, Demand-Side Management.

HOTELS

Construction, Agriculture, Demand-Side Management, Biomass, Gasification, Recycling.

Co-generation/alternative energy sources.

Deep water cooling systems - Co-Geo grid systems.

Co-generation technology/alternative fuel source power generation/aqua culture/composting.

Not sure.

AUTOMOTIVE

Computer, Sales & Marketing, Solar.

MISCELLANEOUS

Alternative materials, alternative waste, gray water systems, demand-side management, pv systems design.

Biomass and wind.

Lumber.

Alternative fuel-biodiesel S.

Other comments:

Offer more classes in electrical, plumbing, auto, and building trades.

Thank you.

No comments.

Place some of your trainees with the solar water heater contractors. They need help right now.

Very interesting.

APPENDIX A
Developers of the SusTech Needs Assessment

MIST Advisory Committee:

Jim McElvaney, Sustainable Technologies, Inc.
Kalvin Kobayashi, County of Maui, Office of Economic Development
Nicolas Oosterveen, Nick Oosterveen Designs, Inc.
Mark J. Andrews, Office of Technology Transfer
Robert J. Kwok, HC&S, Production & Maintenance
Henry Lindsey, Lindsey Building & Co. & Maui Contractor's Association
Hugues Ogier, Energy Services Division, Maui Electric Company
Dick Doran, Aloha Plastic Recycling, Inc.
Mike Williams, Valley Isle Building Supply
Larry Zolezzi, Pacific BioDiesel

MIST Coordinator: Don Ainsworth

Division Chair for Vocational Technical: Dennis Tanga

Director of Rural Community Leadership: Jane Yamashiro

Assistant Dean of Instruction: Jean A. Pezzoli, Ph.D.

Dean of Instruction: Liz d'Argy



Maui Community College
UNIVERSITY OF HAWAII

SUSTAINABLE TECHNOLOGIES

**Survey on Maui County Needs
for Education and Training in Sustainable Technologies**

Sustainable Technologies: A program designed to educate a workforce for businesses involved in alternative methods for meeting long term energy needs on Maui and in the State of Hawaii. This approach involves utilizing alternative resources including demand-side management, solar and wind energy, biomass, energy production/management and alternative transportation fuels.

1. Estimate the number of employees in your firm (including yourself) who could benefit from courses in these areas of Sustainable Technologies:

Construction, Alternative Materials and Methods
 Alternative Transportation Systems (electric cars, biodiesel, methane gas)
 Photovoltaic System Design/Install
 Solar Thermal System Design/Install
 Demand-side Management
 Biomass Systems
 Power Production and Management
 Wind Power System Design/Install
 Alternative Waste/Gray Water Systems
 Other _____

- 2a. In what type of business activities are you involved?

<input type="checkbox"/> Construction	<input type="checkbox"/> Power Generation	<input type="checkbox"/> Biomass Gasification
<input type="checkbox"/> Biomass Power	<input type="checkbox"/> Anaerobic Digestion	<input type="checkbox"/> Alternative Fuels
<input type="checkbox"/> Hotel	<input type="checkbox"/> Electrical	<input type="checkbox"/> Solar Thermal Apps
<input type="checkbox"/> Agriculture	<input type="checkbox"/> Architectural Design	<input type="checkbox"/> Horticulture Design
<input type="checkbox"/> Demand-Side Mgmt	<input type="checkbox"/> Recycling	<input type="checkbox"/> Composting
<input type="checkbox"/> Permaculture	<input type="checkbox"/> Aquaculture	<input type="checkbox"/> Other: specify _____

- 2b. What is the size of your company: _____ number of employees

3. If you or your employees received Sustainable Technologies related training within the past year, specify the area(s):

MAUI COMMUNITY COLLEGE
SUSTAINABLE TECHNOLOGIES

Please take a few minutes to complete this survey form. Our planned course of instruction in Sustainable Technologies depends upon verifying that the skills necessary to design, install and service the emerging technology systems are needed in the workforce on Maui. Just re-fold and tape this form with our return address on the outside and mail (no postage required). Thanks you.

If you have any questions, or would like to visit our program on campus, please call Don Ainsworth at 984-3384.

3. Number of employees _____

4. Your business activity area(s)
- ___ Construction ___ Power generation
 - ___ Biomass power ___ Anaerobic systems
 - ___ Alternative fuels ___ Hospitality
 - ___ Electrical ___ Solar thermal
 - ___ Agriculture ___ Architectural
 - ___ Horticulture ___ Demand-side mgt.
 - ___ Recycling ___ Composting
 - ___ Permaculture ___ Aquaculture
 - ___ Other _____

5. When would you or your employees most likely take advantage of courses in Sustainable Technologies
___ a.m. ___ p.m. ___ evenings ___ Saturdays

6. In the next five years, how many staff with Sustainable Technologies skills to you expect to hire (give number)
___ due to expansion ___ due to replacement

at what hourly rate of pay
___ minimum wage (\$5.25) ___ \$5.30-\$8.00
___ \$8.00-\$15.00 ___ \$15.00-\$25.00 ___ \$25+

7. Do you/would you pay a differential wage to your employees with sustainable:

Skills ___ yes ___ no \$ ___ per hour more
Training ___ yes ___ no \$ ___ per hour more

8. Do you/would you give preference in hiring promoting or retaining to employees with Sustainable skills? ___ yes ___ no

9. What new areas in Sustainable Tech. are emerging on Maui _____

Other comments: _____



Maui Community College
UNIVERSITY OF HAWAII

Survey on County Needs for Education and Training in Sustainable Technologies

Sustainable Technologies: A program designed to educate a workforce for business involved in alternative methods for meeting long term energy needs on Maui and in the State of Hawaii. This program involves the use of resources including demand-side management; solar, wind, water & biomass energy production & management; and alternative transportation fuels.

Please help us by completing & returning this survey by July 1, 1997. Thank you.

1. How many employees in your firm could benefit from courses in the following areas:

- ___ Construction (new materials & methods)
- ___ Vehicle fuel (electric, biodiesel, methane)
- ___ Photovoltaic system design/install
- ___ Solarthermal system design/install
- ___ Biomass systems
- ___ Windpower system design/install
- ___ Waste/gray water systems
- ___ Demand-side management
- ___ Power production and management
- ___ Other _____

2. What Sustainable Technologies related training have your employees received within the past year, specify the area(s):

Number of employees ___ hours/employees
Where was training held _____
Who was sponsor/trainer _____

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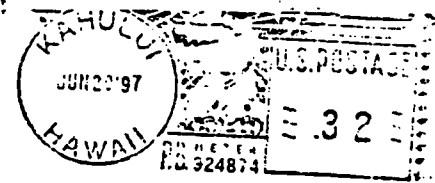
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