

**LAPORAN KEMAJUAN
PROGRAM IPTEKS BAGI PRODUK EKSPOR**



**I_bPE UKM Batik Tulis Jogja
yang Berjuang Meningkatkan Kapasitas Produksi
dan Manajemen Usaha**

Tahun ke-3 dari rencana 3 tahun

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DIBIYAI DENGAN
DIPA DIREKTORAT RISET DAN PENGABDIAN MASYARAKAT
KEMENTERIAN RISET TEKNOLOGI PENDIDIKAN
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**UNIVERSITAS MUHAMMADIYAH YOGYAKARTA
2016**

HALAMAN PENGESAHAN

Judul : IbPE UKM Batik Tulis Jogja yang Berjuang
Meningkatkan Kapasitas Produksi dan Manajemen Usaha

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Nama Institusi Mitra :
Alamat :
Penanggung Jawab :
Tahun Pelaksanaan : Tahun ke 3 dari rencana 3 tahun
Biaya Tahun Berjalan : Rp 95.000.000,00
Biaya Keseluruhan : Rp 460.000.000,00

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Ketua



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FORMULIR EVALUASI ATAS CAPAIAN LUARAN KEGIATAN

Ketua : Dr. Ramadoni Syahputra, ST., MT.
Perguruan Tinggi : Universitas Muhammadiyah Yogyakarta
Judul : IbPE Batik Tulis Jogja yang Berjuang Meningkatkan Kapasitas
Produksi dan Manajemen Usaha
Waktu Kegiatan : Tahun ke-3 dari rencana 3 tahun

Luaran yang direncanakan dan capaian tertulis dalam proposal:

No	Luaran yang Direncanakan	Capaian
1	Instalasi solar home system 800 Wp	100%
2	Kompor batik listrik otomatis	100%
3	Mesin pompa air	100%
4	Sistem manajemen berbasis komputer	100%
5	Sistem marketing berbasis web	100%
6	Penambahan pegawai baru	100%
7	Peningkatan kuantitas dan kualitas produksi	100%
8	Peningkatan laba UKM	100%
9	Publikasi di Seminar Internasional	100%
10	Publikasi di Jurnal Internasional	90%

CAPAIAN (Lampirkan bukti-bukti luaran dari kegiatan dengan judul yang tertulis di atas, bukan dari kegiatan penelitian dengan judul lain sebelumnya)

1. PUBLIKASI ILMIAH

	Keterangan
ARTIKEL JURNAL KE-1*	
Nama jurnal yang dituju	JATIT
Klasifikasi jurnal	Jurnal Internasional terindeks Scopus
<i>Impact factor</i> jurnal	0,17
Judul artikel	APPLICATION OF GREEN ENERGY FOR BATIK PRODUCTION PROCESS
Status naskah (diberi tanda √)	
- Draf artikel	√
- Sudah dikirim ke jurnal	
- Sedang ditelaah	
- Sedang direvisi	
- Revisi sudah dikirim ulang	
- Sudah diterima	
- Sudah terbit	

* Jika masih ada artikel ke-2 dan seterusnya, uraikan pada lembar tambahan

2. BUKU AJAR

Buku ke-1*	
Judul	:

3. PEMBICARA PADA PERTEMUAN ILMIAH (SEMINAR/SIMPOSIUM)

	Internasional
Judul Makalah	Application of Green Technology for Batik Industry in order to Increase Productivity and Maintain a Healthy Environment
Nama Pertemuan Ilmiah	Seminar Internasional ICOMPAC 2016 di Surabaya
Tempat Pelaksanaan	ITS
Waktu Pelaksanaan	Nopember 2016
- Draf makalah	
- Sudah dikirim	
- Sedang direview	√
- Sudah dilaksanakan	

4. SEBAGAI PEMBICARA KUNCI (*KEYNOTE SPEAKER*)

	Nasional	Internasional
- Bukti undangan dari Panitia		
- Judul Makalah		
- Penulis		
- Penyelenggara		
- Waktu Pelaksanaan		
- Tempat Pelaksanaan		
- Draf makalah		
- Sudah dikirim		
- Sedang direview		
- Sudah dilaksanakan		

5. UNDANGAN SEBAGAI *VISITING SCIENTIST* PADA PERGURUAN TINGGI LAIN

	Nasional	Internasional
- Bukti undangan		
- Perguruan tinggi pengundang		
- Lama kegiatan		
- Kegiatan penting yang dilakukan		

6. CAPAIAN LUARAN LAINNYA

HKI	
TEKNOLOGI TEPAT GUNA	Solar home system, kompor batik listrik, dan sistem marketing berbasis web
REKAYASA SOSIAL	
JEJARING KERJA SAMA	Kerjasama dengan Disperindagkop Kab. Bantul dan Prop. Daerah Istimewa Yogyakarta
PENGHARGAAN	
LAINNYA (Tuliskan)	

Jika luaran yang direncanakan tidak tercapai, uraikan alasannya:

.....

Yogyakarta, 2 Agustus 2016
 Ketua,

(Dr. Ramadoni Syahputra, ST., MT.)

**Lampiran: Artikel ilmiah yang dipublikasi pada Jurnal Internasional JATIT
(Terindeks Scopus)**

APPLICATION OF GREEN ENERGY FOR BATIK PRODUCTION PROCESS

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Abstract

Batik is a piece of cloth applied by means of a dye-resist technique using "batik-wax" as the resisting medium. Indonesian batik has designated by UNESCO as a Masterpiece of Oral and Intangible Heritage of Humanity. As part of the acknowledgment, UNESCO insisted that Indonesia has been preserved their heritage. This fact should be grateful and responded with efforts to develop and preserve Indonesian batik. One effort to develop and preserve Indonesian batik is to adopt green energy technologies in the production process. As generally in Indonesia, batik industry is currently still a class of small and medium enterprises (SMEs). One of the quite popular in Indonesia is Bantul batik. Of the many batik SMEs in Bantul, there are two SMEs that have the potential to develop, namely Ida Lestari Batik and Arjo Munir Batik. The issue of the SMEs is that the production process is still using kerosene stoves, while the price of kerosene is very expensive and difficult to obtain. Therefore, in this paper described the application of environmentally friendly energy sources for the production process of batik. The energy source is the installation of solar home system. The system is used to distribute electrical power to the batik electric stove. The use of solar home system and batik electric stoves is more practical and economical than kerosene stove. Another advantage is to reduce dependence on fossil fuels and help preserve the environment with the use of green technology.

Keywords: *green energy, solar home systems, SMEs batik, batik electric stove, community development.*

I. Introduction

Green energy technology is essential to limiting global warming and protecting ecosystems by reducing carbon emissions through use of renewable energy and energy efficiency. Green energy technology reduces CO₂ emissions by increasing energy efficiency and enabling alternative sources like solar, hydro, wind etc. Climate change comes at a cost to both our economy and our environment. As temperatures rise, agricultural output will fall, damage from floods and storms will increase, tropical diseases will become more prevalent and access to water will become more of a problem for more and more people. The cost to our environment is greater and loss is irreversible. The Earth's flora and fauna will suffer both directly from higher temperatures and indirectly through the damage to their habitats.

Even small temperature increases will cause coral bleaching and threaten some amphibians. Temperature rises of 3°C or 4°C and more will lead to major extinctions around the globe [1].

One of the popular in green energy technology is solar energy. Solar energy has experienced an impressive technological shift. While early solar technologies consisted of small-scale photovoltaic cells, recent technologies are represented by solar concentrated power and also by large-scale PV systems that feed into electricity grids. The costs of the technologies have dropped substantially over the last 30 years [2]. The rapid expansion of the solar energy market can be attributed to a number of supportive policy instruments, the increased volatility of prices and the environmental externalities of fossil fuels, particularly greenhouse gas emissions.

Theoretically, solar energy has resource potential that far exceeds the entire global energy demand [3]. Despite this technical potential and the recent growth of the market, the contribution of solar energy to the global energy supply mix is still negligible. A number of studies, including de Vries et al. [4], have addressed various issues related to solar energy. This study presents a synthesis review of existing literature as well as presents economic analysis to examine competitiveness solar energy with fossil energy counterparts. Although the clean development mechanism of the Kyoto Protocol has helped the application of some projects of solar energy, its role in promoting solar energy is very small as compared to that for other renewable energy technologies because of cost competitiveness. Existing studies we reviewed indicate that the share of solar energy in global energy supply mix could exceed 10% by 2050. This would still be a small share of total energy supply and a small share of renewable supply if the carbon intensity of the global energy system were reduced by something on the order of 75%, as many have argued is necessary to stem the threat of global warming.

II. Batik Industries and Their Problems

Batik is made by drawing designs on fabric using dots and lines of hot wax, which resists dyes and therefore allows the artisan to color selectively by soaking the cloth in one color, removing the wax with boiling water and repeating if multiple colors are desired. Batik has originating from Java. Indigenous patterns often have symbolic meanings which are used in specific ceremonies, while coastal patterns draw inspiration from a variety of cultures. Batik has been used as everyday clothing since ancient times, and it is still used by many Indonesians today in occasions ranging from formal to casual. On October 2009, UNESCO designated Indonesian batik as a Masterpiece of Oral and Intangible Heritage of Humanity. As part of the acknowledgment, UNESCO insisted that Indonesia preserve their heritage [5].

In this study, to test the application of solar home systems are burdened with an electric stove in two SMEs batik industries, namely Ida Lestari Batik SMEs and Arjo Munir Batik SMEs. Both SMEs located in the village of Wijirejo, Pandak subdistrict, Bantul districts, Daerah Istimewa Yogyakarta province, Indonesia. The existing conditions of the two SMEs are described as follows:

- 1) Ida Lestari batik SMEs capable of producing batik ranging from 200 to 400 pieces of batik cloth per month. Low productivity in the SMEs is not on the ability of the human resources and the difficulty of obtaining raw materials and wax batik cloth, but rather:
 - a. A number of constraints in producing batik is because only rely on kerosene stoves and firewood and even use coconut fiber burnt. Since the government of Indonesia has implemented a program for kerosene to gas in 2008, then one of the sectors that are directly affected by the program is

batik industry. In Bantul district, kerosene prices trending up from time to time (i.e. current prices in April 2014 reached Rp 11,000 per liter), and often there is a shortage of kerosene.

- b. Ida Lestari batik SMEs actually have to have a single electric stove for batik, but not reliable. In addition to the amount that is only one piece, another issue is the continuity of the electricity. Electric stove used in the SMEs is not equipped with a battery, so it's really just rely on commercial power. If commercial power is lost, the stove can not operate. The flow of electricity in the location of these SMEs often experience blackouts, both in weather conditions of rain and sunny weather, because of the low level of reliability.
- 2) Arjo Munir Batik SMEs capable of producing batik ranging from 150 to 260 pieces of batik cloth per month. Relatively low productivity is caused by:
 - a. So far, only rely on kerosene stoves and even using firewood and coconut fibers are burned, the high price of kerosene and kerosene shortages often occur.
 - b. Actually the SMEs still rely kerosene stove in the production of batik and batik yet have an electric stove.
 - 3) Both SMEs uses electrical energy derived from the PLN. Ida Lestari batik SMEs subscription with a power capacity of 450 VA and Batik Arjo Munir subscription with the same power capacity. However, during the frequent power outages that at times can not be estimated, in the rain and sunny weather at the time either day or night. This situation will be very difficult if they want to use an electric stove in the process of batik production .

III. Methods

In order to increase production capacity, market expansion, and capacity building activities in Ida Lestari Batik SMEs and Arjo Munir Batik SMEs, then in the programs carried out the following activities:

- 1) Batik production capacity of both SMEs can be improved:
 - a. Provide an electric stove specifically for batik SMEs.
 - b. Provide and install solar cell home systems to ensure continuity of the flow of electrical power to distribute electrical power to the stove and also home lighting batik production. Provision the solar cell home system is also useful to overcome the problems in both SMEs because it has a low power capacity installed and frequent power outages, while each SMEs will use electrical power continuously for 2 pieces of 125 watts electric stoves.
- 2) Improving human resource capacity in the respective SMEs.

The problem-solving step in the batik industry in this research is shown in Fig. 1.

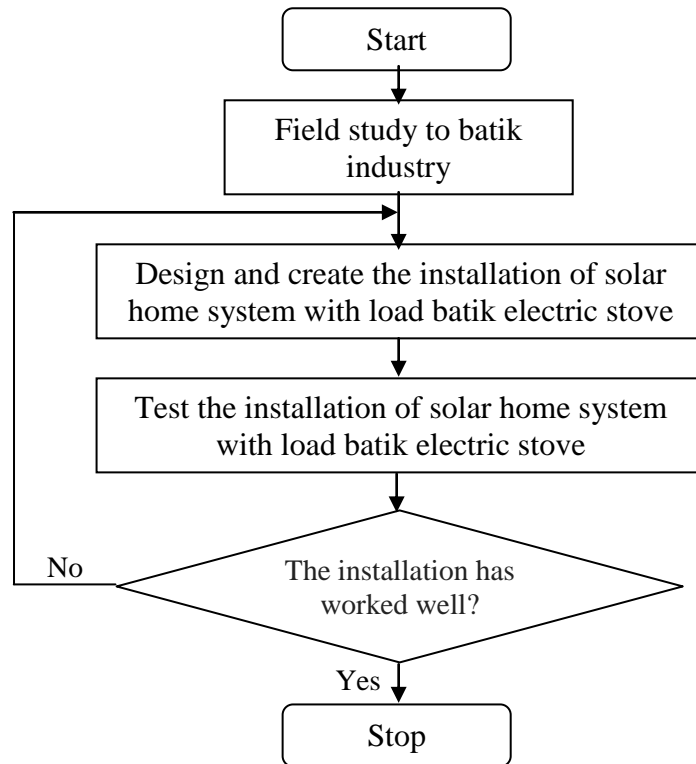


Fig. 1. The problem-solving steps in the batik industry in this research.

IV. Test Results

The geographical condition of Indonesia which is located in the tropical region is traversed equator particular gift for the people of Indonesia if it is associated with potential sources of electrical energy derived from sunlight. On the bright midday sun radiation is able to reach 1000 Watt/m^2 . If a semiconductor device with area of 1 m^2 has an efficiency of 10 % then the solar cell module is capable of delivering 100 watts of power [6-8]. Currently commercial module efficiency solar cells ranged from 5 to 15% depending on the constituent materials [9-10]. On a national scale, the government of Indonesia has a serious program in renewable energy, one of which is the solar energy [11]. The government of Indonesia has targeted that power generator from renewable energy resources will be on-grid for up to 5% by the year 2025.

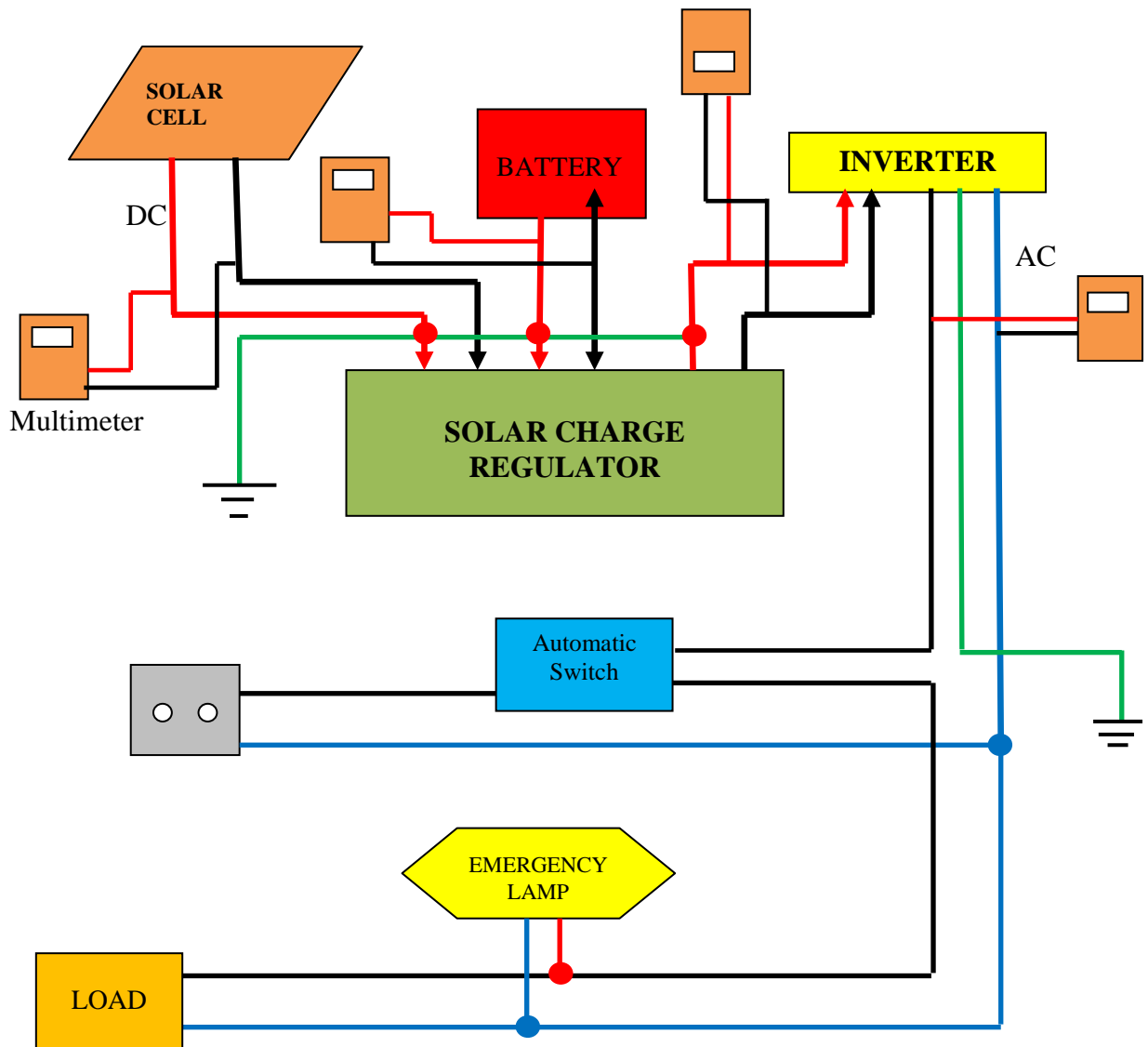


Fig. 2. The scheme of solar home system in our work.

In this work, the create-design of solar home system with loading of batik electric stove is done. The scheme of solar home system in this work is shown in Fig. 2. Solar cell home systems installation for each SME to ensure the availability of electric current for batik electric stove and lighting the batik production houses. The power capacity of solar cell in the installation is 100 Wp. The technical specifications of 100 Wp solar cell panel for batik industry has described in Table 1. The main burden of solar home systems is batik electric stove of 125 W, 220 volts, as shown in Fig. 3.

Table 1. Technical specifications of 100 Wp solar cell panel for batik industry.

Parameters	Values	Units
Maximum power	100	watts
Open circuit voltage	21.6	volts

Short circuit current	5.70	amperes
Maximum system voltage	1000	volts
Dimension	835 x 540 x 28	mm
Test conditions	AM1.5 1000W/m ² 25 ° C	-



Fig. 3. Batik electric stove of 125 W, 220 volts.

The main function of solar home systems are the electrical power supply to the load on the batik electric stove with a power capacity of 125 watts each burner. Production of electric energy solar home systems is highly dependent on sunlight. In one day, the most effective sunlight to generate electrical energy in just over 5 hours, as shown in Fig. 4.

Solar insolation (Fig. 4) can be determined as follows:

- 1) Insulation sunlight can be estimated from that of predicted weather conditions.
- 2) Weather forecast data in the form of long sun emits rays can be obtained from meteorological and geophysics agency.
- 3) The length of time the sun radiates its light is converted into the peak sun hours

Testing of solar home systems with a single load electric stove for batik described as shown in Table 2 and Table 3.

Table 2. Technical specifications of solar home system load.

Parameters	Values	Units
Maximum power	125	watts
Nominal voltage	220	volts
Nominal current	0.60	amperes
Frequency	50	Hz

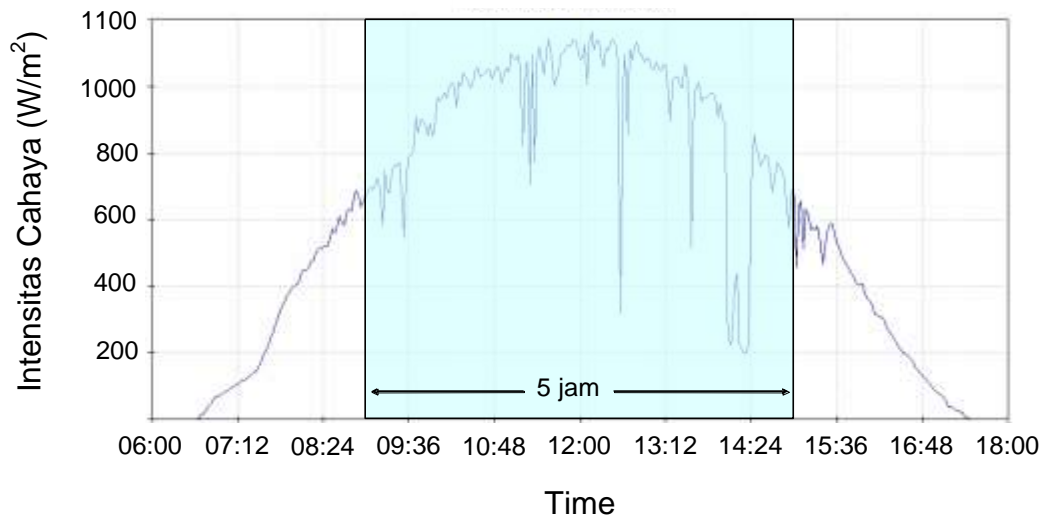
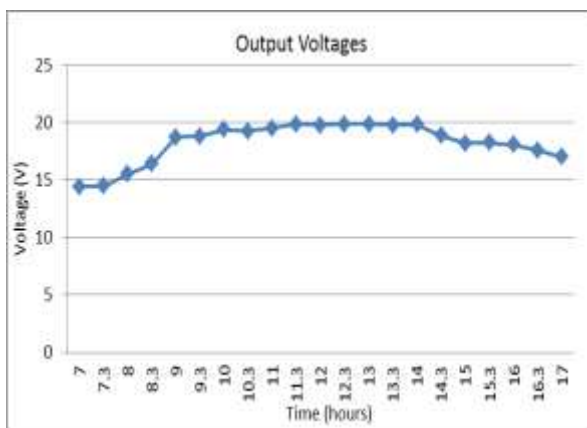


Fig. 4. Daily solar insolation characteristics [10].

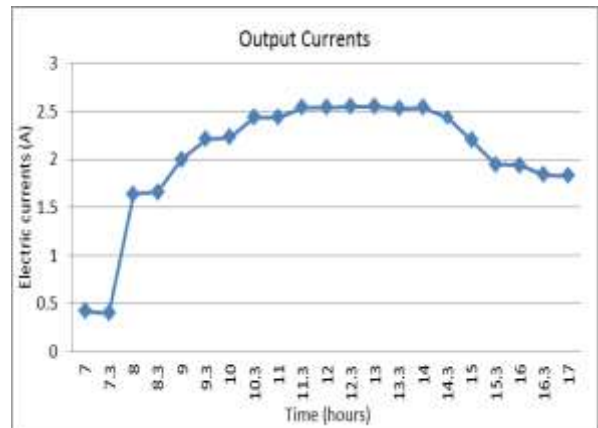
After the sunlit solar cells for 5 hours, then the solar cells can be used with a load power of 125 watts for 2 hours, which is described in Table 3.

Table 3. Test results of solar home system installation.

Parameters	Values	Units
Maximum power	100	watts
Nominal voltage	220	volts
Maximum drying time	5	hours
Frequency	50	Hz
Energy produced	$100 \times 5 = 500$	watt-hours
Long duration usage load	$500/125 = 4$	hours



(a)



(b)

Fig. 5. (a) Solar cell output voltage, (b) Solar cell output currents.

Fig. 5(a) and Fig. 5(b) show the output voltages and the output currents of solar cell under study, respectively. Testing of the solar cell with loading of 125 W batik electric stove is start from 7.00 AM to 17.00 PM. As shown in Fig. 5(a) that output voltage of solar cell has varied from 14.45 volts to 19.88 volts. Magnitude of the voltage dependent on sunlight, where the maximum voltage occurs at 12.00 AM and the minimum voltage occurs at 7.00 PM.

Thus, application of solar home systems in Ida Lestari Batik SMEs and Arjo Munir Batik SMEs help continuity of batik production. This is in accordance with the needs of both SMEs who have often experienced a power outage that disrupts batik production process, especially if using an electric stove for batik .

Results of IBM 's service activities have felt the impact and benefits for both Ida Lestari Batik SMEs and Arjo Munir Batik SMEs. The impact and benefits have been felt through service activities are:

- 1) Batik production capacity of both both Ida Lestari Batik SMEs and Arjo Munir Batik SMEs has increased with the following details:
 - a. Ida Lestari Batik SMEs, if prior to the work only capable of producing combination stamp and write batik and pure batik with a total capacity of approximately 200 pieces of cloth batik per month, then after our activity is able to increase its production up to 250 pieces of cloth batik per month. The increase in productivity has been accompanied by an increase in gross profit of an average SME Rp 5 million per month to an average of Rp 6 million per month.
 - b. Arjo Munir Batik SMEs, if prior to the work only capable producing combination stamp and write batik and pure batik with a total capacity of approximately 400 pieces of cloth batik per month, then after our activity is able to increase production to 450 pieces of cloth batik per month. The increase in productivity has been accompanied by an increase in gross profit of an average SME Rp 9 million per month to an average of Rp 10.5 million per month.
- 2) Expansion of each SME market has increased. Both SME market has dared not only to supply the batik cloth batik shops around Jalan Malioboro and Beringharjo mart, Yogyakarta, but also through exhibitions in several cities such as Jakarta and Bandung are often sponsored by the Department of Industry and Local Government of Bantul.
- 3) Human resources capacity in each SME has increased in quality, mastery of which operating and maintenance of solar home systems installation and electric stoves for batik.

V. Conclusion

This work has proved to be very beneficial for both Ida Lestari Batik SMEs and Arjo Munir Batik SMEs. Solar home systems installation and procurement of electric stoves for batik has managed to increase both production capacity and gross profit of the SMEs. In a period of ten months in 2013, Ida Lestari batik SMEs productivity increased from an average of 200 pieces of batik cloth to an average of 250 pieces per month. Similarly, Arjo Munir Batik SMEs, where productivity increased from an average of 400 pieces of batik cloth to an average of 450 pieces per month. The increase in productivity has been accompanied by an increase in gross profit of the SMEs.

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Lampiran: Borang Kegiatan Program IbPE

Judul kegiatan	:	IbPE UKM Batik Tulis Jogja yang Berjuang Meningkatkan Kapasitas Produksi dan Manajemen Usaha
Tim IbPE		
Jumlah Dosen terlibat	:	3 orang
Gelar akademik Tim		S-3: 2 orang, S-2: 1 orang, S-1: 1 orang, Diploma: 1 orang
Gender	:	Laki-laki: 2 orang Perempuan: 1 orang
Bidang Keahlian Tim	:	Teknologi
Prodi/Fakultas/Sekolah	:	Prodi Teknik Elektro/Fakultas Teknik dan Prodi Teknologi Informasi/ Fakultas Teknik
Jumlah UKM Mitra	:	2 UKM
UKM MITRA 1		
Nama UKM	:	PT Mahakarya Putra Indonesia
Status Usaha	:	PT
Jenis Usaha	:	Sandang dan Kulit
Jarak PT ke lokasi UKM 1	:	2 km
Omzet saat ini	:	≤ Rp 500 juta
Jenis produk	:	1. Batik tulis: 600 lembar/tahun 2. Batik kombinasi (tulis dan cap): 2400 lembar/tahun 3. Baju non kebaya: 3600 buah/tahun 4. Baju kebaya: 360 buah/tahun Total produksi per tahun: 6960 buah
Kapasitas Produksi per tahun	:	> 1000 buah
Sumber Daya		
Manusia	:	S-1: 10 orang, Diploma: 15 orang SMA: 25 orang, SMP: 150 orang, SD: 50 orang
Fasilitas Ruangan	:	Administrasi: 224 m ² Produksi: 1000 m ² (3 lokasi) Gudang: 120m ² Ruang Pamer: 180 m ² (3 lokasi)
Fasilitas Peralatan yang Tersedia	:	Alat Produksi: 1729 buah (cap batik, canthing, kompor gas, tabung gas, wadah nglorod, meja cap, mesin pompa, meja koreksi, genset, mesin jahit, mesin bordir, meja patron, scanner) Alat administrasi: 20 buah (komputer, printer, scanner, meja-kursi)
Nilai Investasi Awal	:	Rp 2.000.000.000,- (peralatan, bahan baku, dll)
Komunikasi	:	✓ Internet ✓ Telepon ✓ Fax ✓ HP
Konsumen	:	✓ Masyarakat DN

		<ul style="list-style-type: none"> ✓ Masyarakat LN ✓ Pejabat sipil/militer ✓ Pengusaha ✓ Selebritis ✓ Pegawai
Pasar	:	<ul style="list-style-type: none"> ✓ Lokal ✓ Nasional ✓ Regional ✓ Global
Model Pemasaran	:	<ul style="list-style-type: none"> ✓ Dijual sendiri langsung ✓ Buyer membeli langsung ✓ <i>Show room</i> di hotel Grand Hyatt (Jogja), hotel Sherator (Jogja), dan apartemen Bellezza Arcade (Jakarta) ✓ Pameran di dalam dan luar negeri ✓ Peragaan busana di jakarta dan Yogyakarta
Jaminan mutu	:	Ada Sistem Jaminan Mutu
Limbah	:	Ditangani tapi tidak tepat
Persoalan yang ditangani melalui IbPE	:	<ul style="list-style-type: none"> ✓ Teknologi ✓ Manajemen ✓ SDM

UKM MITRA 2

Nama UKM	:	Batik Ida Lestari
Status Usaha	:	Lainnya
Jenis Usaha	:	Sandang dan Kulit
Jarak PT ke lokasi UKM 1	:	9 km
Omzet saat ini	:	≤ Rp 500 juta
Jenis produk	:	<ol style="list-style-type: none"> 1. Batik tulis: 300 lembar/tahun 2. Batik kombinasi (tulis dan cap): 1800 lembar/tahun 3. Batik cap: 2400 buah/tahun <p>Total produksi per tahun: 4500 buah</p>
Kapasitas Produksi per tahun	:	> 1000 buah
Sumber Daya		
Manusia	:	Diploma: 1 orang SMA: 3 orang, SMP: 3 orang, SD: 3 orang
Fasilitas Ruangan	:	Administrasi: 16 m ² Produksi: 96 m ² Gudang: 20 m ² Ruang Pamer: 20 m ²
Fasilitas Peralatan yang Tersedia	:	Alat Produksi: 84 buah (cap batik, canthing, kompor gas, tabung gas, wadah nglorod, meja cap, mesin pompa, meja koreksi, mesin jahit, kompor minyak)
Nilai Investasi Awal	:	Rp 100.000.000,- (peralatan, bahan baku, dll)
Komunikasi	:	<ul style="list-style-type: none"> ✓ Internet ✓ Telepon ✓ HP

Konsumen	:	<ul style="list-style-type: none"> ✓ Masyarakat DN ✓ Masyarakat LN ✓ Pengusaha ✓ Pegawai ✓ Mahasiswa/pelajar
Pasar	:	<ul style="list-style-type: none"> ✓ Lokal ✓ Nasional ✓ Regional ✓ Global
Model Pemasaran	:	<ul style="list-style-type: none"> ✓ Konsinyasi ✓ Via Pengepul ✓ Dijual sendiri langsung ✓ Buyer membeli langsung ✓ <i>Show room</i> di Pandak Bantul ✓ <i>Show room</i> mitra di Pasar Beringharjo, Malioboro, dan Jl C Simanjuntak 3 Kota Yogyakarta ✓ Pameran di kota-kota besar (Jakarta, Jogja, Bandung, Denpasar, Batam)
Jaminan mutu	:	Ada Sistem Jaminan Mutu
Limbah	:	Tahu tapi tidak ditangani
Persoalan yang ditangani melalui IbPE	:	<ul style="list-style-type: none"> ✓ Teknologi ✓ Manajemen ✓ SDM
Aktifitas IbPE	:	Tahun II
Pendampingan Teknis	:	<ul style="list-style-type: none"> ✓ Teknologi ✓ Manajemen ✓ SDM ✓ Pemasaran
Pendampingan Teknologi	:	<ul style="list-style-type: none"> ✓ Mutu bahan baku ✓ Rancang bangun alat proses ✓ Desain/lay out proses ✓ Kontrol mutu ✓ Ecolabelling
Pendampingan Manajemen	:	<ul style="list-style-type: none"> ✓ Manajemen keuangan ✓ Manajemen produksi
Pendampingan Pemasaran	:	<ul style="list-style-type: none"> ✓ Pameran lokal/regional ✓ Internet ✓ Media massa ✓ Brosur/leaflet
Evaluasi Kegiatan	:	Tahun II
Kegiatan yang Paling Berhasil	:	
Indikator keberhasilan	:	<p>UKM PT Mahakarya Putra Indonesia</p> <ul style="list-style-type: none"> ✓ Kualitas 10 % (sesuai target) ✓ Kapasitas produksi 15 % (melebihi target) ✓ Omzet 15 % (melebihi target) ✓ Luas pasar 20 % (melebihi target) ✓ Jumlah tenaga kerja 2 % (melebihi target) ✓ Jenis produk 0 % (tetap) ✓ Nilai aset 15 % (melebihi target)

		UKM Batik Ida Lestari ✓ Kualitas 10 % (sesuai target) ✓ Kapasitas produksi 15 % (melebihi target) ✓ Omzet 15 % (melebihi target) ✓ Luas pasar 15 % (melebihi target) ✓ Jumlah tenaga kerja 10 % (sesuai target) ✓ Jenis produk 0 % (tetap) ✓ Nilai aset 15 % (melebihi target)
Rerata Omzet Tahunan	:	UKM PT Mahakarya Putra Indonesia ✓ Rp 501 juta – Rp 1 milyar UKM Batik Ida Lestari ✓ ≤ Rp 500 juta
Jumlah Produk	:	UKM PT Mahakarya Putra Indonesia ✓ > 1000 buah UKM Batik Ida Lestari ✓ > 1000 buah
SDM	:	UKM PT Mahakarya Putra Indonesia S-1: 11 orang, Diploma: 16 orang SMA: 25 orang, SMP: 153 orang, SD: 50 orang UKM Batik Ida Lestari Diploma: 1 orang SMA: 3 orang, SMP: 4 orang, SD: 3 orang
Pasar	:	✓ Lokal ✓ Nasional ✓ Regional ✓ Global
Nilai Investasi	:	UKM PT Mahakarya Putra Indonesia ✓ Rp 2.200.000.000,- (peralatan, bahan baku, dll) UKM Batik Ida Lestari ✓ Rp 125.000.000,- (peralatan, bahan baku, dll)
Manfaat bagi Tim IbPE	:	✓ Pemutakhiran pengetahuan ✓ Publikasi artikel ilmiah ✓ Kerjasama saling menguntungkan dengan mitra ✓ Potensi perolehan HKI di bidang pengolahan limbah batik
Keberlanjutan Kegiatan Setelah Tahun ke-3	:	Berlanjut
Sumber Dana Program		
DIPA Ditlitabmas		
Tahun I	:	Rp 85.000.000,- (disetujui)
Tahun II	:	Rp 100.000.000,- (disetujui)
Tahun III	:	Rp 95.000.000,- (disetujui)
UKM PT Mahakarya Putra Indonesia		

Tahun I	:	Rp 35.000.000,-
Tahun II	:	Rp 35.000.000,-
Tahun III	:	Rp 35.000.000,-
UKM Batik Ida Lestari		
Tahun I	:	Rp 25.000.000,-
Tahun II	:	Rp 25.000.000,-
Tahun III	:	Rp 25.000.000,-
Peran Tim IbPE	:	<ul style="list-style-type: none"> ✓ Memimpin persiapan ✓ Menetapkan teknis pelaksanaan ✓ Mengubah strategi pendekatan di lapangan ✓ Mengelola keuangan ✓ Menetapkan jadwal kegiatan
Peran masing-masing UKM	:	<ul style="list-style-type: none"> ✓ Membantu persiapan ✓ Membantu teknis pelaksanaan ✓ Membantu strategi pendekatan di lapangan ✓ Mengelola keuangan ✓ Menyesuaikan dengan jadwal kegiatan ✓ Menyiapkan sarana dan prasarana kegiatan di lapangan
Media Komunikasi	:	<ul style="list-style-type: none"> ✓ Rapat di UKM ✓ Telepon ✓ Sms ✓ E-mail
Kelanjutan Program	:	<ul style="list-style-type: none"> ✓ Permintaan UKM ✓ Kesepakatan Bersama
Usul Penyempurnaan Program		
Model Usulan Kegiatan	:	Pelatihan Manajemen Pemasaran
Anggaran Biaya	:	Jika dimungkinkan dapat ditingkatkan sesuai dengan usulan biaya, karena terkait dengan pengadaan hardware untuk peningkatan kapasitas daya listrik yang berasal dari sumber energi terbarukan dan ramah lingkungan.
Lain-lain	:	Adanya merk dagang produk batik khususnya UKM Batik Ida Lestari. Kini telah dilakukan pendampingan untuk pendaftaran merk dagang melalui dinas terkait.
Dokumentasi (Foto Kegiatan dan Produk)		
Produk/kegiatan yang dinilai bermanfaat dari berbagai perspektif	:	Terlampir
Potret permasalahan lain yang terekam	:	Persoalan limbah batik yang belum tertangani dengan baik

Lampiran: Produk Kegiatan Program IbPE



Gambar L.1. Pemasangan solar cell panel di UKM Batik Ida Lestari.

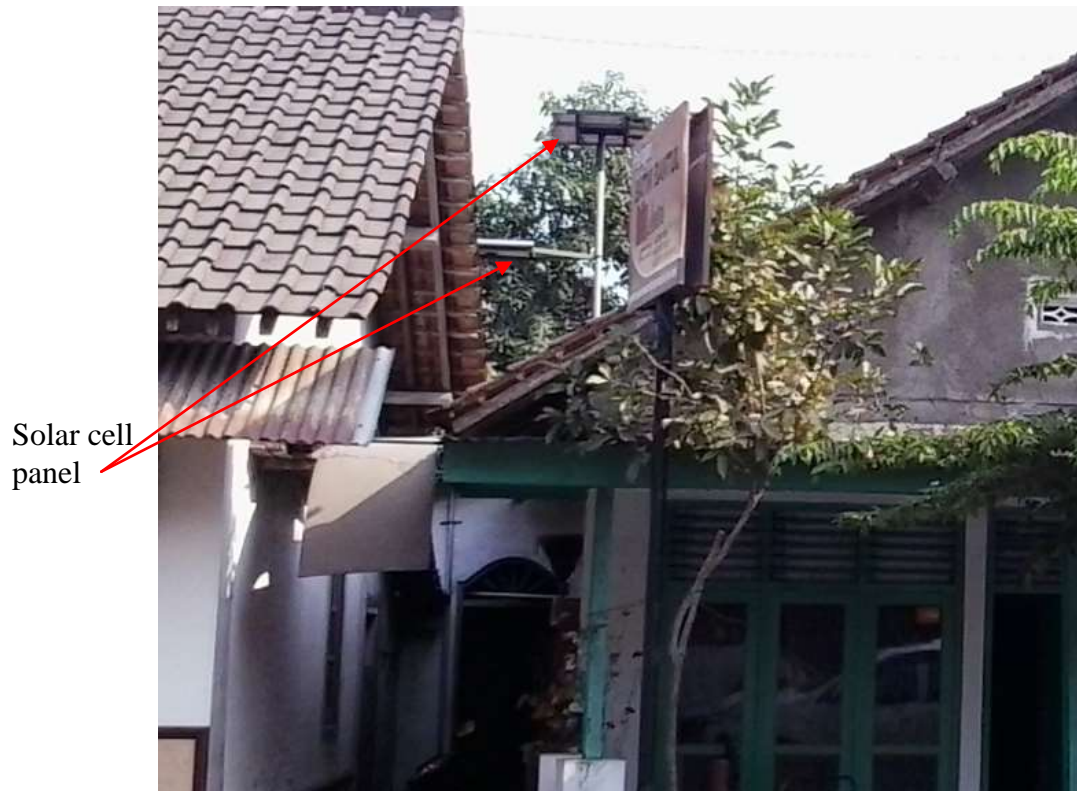
Solar cell
panel



Gambar L.2. Solar cell panel telah terpasang di UKM Batik Ida Lestari.



Gambar L.3. Solar cell panel 800 Wp telah terpasang di UKM Batik Ida Lestari.



Solar cell
panel

Gambar L.4. Solar cell panel 800 Wp telah terpasang di UKM Batik Ida Lestari.



Gambar L.5. Pelatihan pemeliharaan SHS dan kompor batik di Batik Ida Lestari.



Gambar L.6. Pelatihan manajemen proses produksi Batik Ida Lestari.



Gambar L.7. Pelatihan manajemen berbasis komputer Batik Ida Lestari.



Gambar L.8. Penyerahan kompor batik dari ketua tim IbPE kepada bapak Indar (HRD PT Mahakarya Putra Indonesia).



Gambar L.9. Pemasangan solar home system di PT Mahakarya Putra Indonesia.



Gambar L.10. Pemasangan solar home system di PT Mahakarya Putra Indonesia.



Solar cell
panel

Gambar L.11. *Solar cell* telah terpasang di PT Mahakarya Putra Indonesia.



Gambar L.12. Perakitan solar controler dan inverter di PT Mahakarya Putra Indonesia oleh anggota tim IbPE.