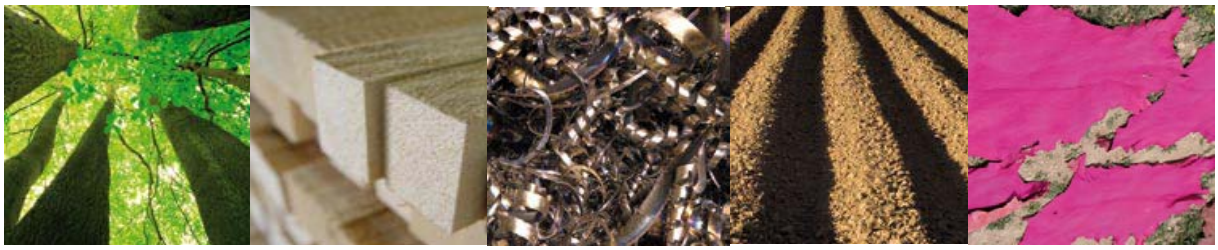

CIP Eco-innovation
Pilot and market replication projects
Call 2012

Call Identifier: CIP-EIP-Eco-Innovation-2012

Progress Report

Pv-MOREDE

Contract ECO/12/333078

Covering the reporting period from
01/10/2013 to 30/09/2014
Reporting Date
<30/10/2014>

Project coordinator: LA MIA ENERGIA SCARL

Project website: http://www.pvmorede.net

Terminology for reports:

In Grant Agreement:	**In Annex I and reporting templates:**
Technical progress report	Progress report (PR)
Interim technical implementation report	Interim report (IR)
Interim/final financial statement	Financial report
Final technical implementation report	Final report (FR)

Notes:

In accordance with the relevant provisions in Article I.6.2 of the Grant Agreement and Annex III, the coordinator must provide the EACI with:

- technical progress reports within 30 calendar days of the end of the reporting period in question.

The technical progress report, **hereafter named progress report (PR),** shall contain the necessary information for the EACI to evaluate the state of implementation of the project, the respect of the work plan and how far project's objectives have been achieved. The progress report is **not payment related**, therefore no financial report should be submitted.

The progress reports are not only an administrative or contractual requisite, but are real management and working tools for all beneficiaries involved in an action. They should be clear, concise, meaningful and comprehensive.

- Progress reports *must* be submitted following the schedule *as foreseen in Article I.6.2 and in the final version of the Annex I attached to the Grant Agreement*, unless modified with agreement of the EACI.
- A PR would normally contain 5-10 pages. Please use font Times New Roman 12 or equivalent.
- The PR should contain a concise statement of the tasks undertaken and a forecast for the next reporting period. Any problems encountered during the period and possible deviations from project plans must be covered.
- **The PR must also contain in an annex:**
  - **an updated version of the publishable project information sheet (template downloadable from the website http://ec.europa.eu/environment/eco-innovation/managing-projects/contract-finance/index_en.htm);**
  - **copy of the deliverables produced during the reporting period, excluding those already sent with the previous report.**
- The coordinator shall submit the report in English, in 2 originals and 1 electronic format.
- Fyi: every beneficiary should keep time sheets; these can be requested by the EACI at random. You can use the timesheet model available on our website http://ec.europa.eu/environment/eco-innovation/managing-projects/contract-finance/index_en.htm

Please indicate the contract number and acronym in the header/footer of each page.

REQUIRED STRUCTURE

1 Progress of work plan in the period

1.1 General progress (max half page) - Summarise the objectives and the achievements, deviations, important problems and difficulties met.

The overall work plan for the first 12 months activities and achievements was not completed coherently. With reference to each WPs these are the main activities, objectives, achievements and related comments:

WP1 – Within the WP1 was dedicated to the overall management of the project (preparation of materials for the meetings, keep track of financial and administrative matters, organization, collection and control of foreseen deliverables and coordination with the rest of the consortium) as well as to the travels made to participate in the Kick-off meeting and the first general meeting. Kick-off meeting was performed 30 days after the project start, with the participation of all the partners. The meeting has included the sharing of signed "Contract Agreement" for consortium management, including rules and decision making process; IPR and commercial management; confidentiality agreement and management for background and foregrounds. Work plan for the first 3 months was issued (and updated at every meeting) and internal documented procedures for purchasing, communication fairs and seminar participation were explained and agreed. During the kick-off text for first press release was approved for initial dissemination.

WP2 – Task 1 – Law and norm data collection were concluded. Collection and study of applicable norms and laws at European level was conducted with special attention to the target countries state of art. UNIFI and LME were mainly involved for Italy; Leitat for Spain, and UNIFI and Leitat for Germany and France. Leitat has participated in the state of the art of current regulations regarding the disposal of pv panels, lead by UNIFI, gathering all the Spanish, regional and local legislation on the field. First of all Leitat has identified the main Spanish legislation that has some kind of impact on the generation and management of photovoltaic panel waste; and therefore can influence on PV-MOREDE project. All the information collected has been classified in three blocks, concerning:

- PV panel waste management
- Technical Building Code
- PV electricity production and feed-in tariff

Once all the regulations were identified, Leitat has reviewed all the legal requirements to determine their applicability on the PV-MOREDE device. All the outcomes of the analysis have been summarized as a chapter of the global deliverable. Leitat also has worked together with UNIFI in defining the table of contents of the D. 2.1

In addition, Leitat has contacted the regional competent body in Waste issues (ARC – Agència de Residus de Catalunya) in order to determine the requirements that the PVMOREDE device need to fulfil in order to be used in Spain. The authorizations needed are, on one hand the authorization for waste treatment operations, and on the other Waste transfer and previous notification to the competent body (Regional Government at origin of waste). Task 2 – A Pestel analysis was performed by UNIFI with the support of Leitat partners to identify technical / legal barriers, opportunities and constrains.

WP3 – Device manufacture is delayed compared with initial time frame, but almost completed, in fact authorisation for freedom to operate (to circulate, treatment of panels, all operational functions in compliance of safety norms) was achieved in September 4th.

Coordinator LME has spent hours for designing and drawing the device, according to the norms for safety, and for fitting on truck. Drawing were produced by LME, made available on a reserved area for UNIFI and Leitat partners. Manufacture of parts started and the first to be completed was the glass separation structure; the second was the trituration device; than separation device and cable circuits were fitted. Crane and conveyor systems were completed. UNIFI started the design review and structural analysis recently on the base of drawings supplied by LME.

Concerning the Task I of WP3 the technical analysis of the documentation currently provided by LME for the pre-industrial device (i.e. 3D Solid Works models concerning the system components and truck containers) has been completed. From this preliminary analysis the still missing information necessary to carry on with the design review phase have been identified and required to LME (e.g. some technical specifications, details on architecture and layout of the components, interface and connection modalities between all the system devices, some performance requirements, size and weight of each system machine, loads and constraints adopted, etc.). Once the collection of the information above will be completed it will be possible to proceed with the system modelling and structural analysis (through modeling and simulations tools such as CAD 3D, structural calculation models (pre/post processor and FEM solver)) functional to the structural analysis of the main critical device parts.

With reference to the Determination of the mass/energy balance for the process and calculation of environmental indicators. (LCA), the aim of this task was to carry out an evaluation of the environmental benefits of PV-MOREDE device, based on real operational data gathered in task 3.1.

The environmental benefits analysis will be conducted following a Life Cycle Assessment (LCA) methodology, in accordance with the standards ISO 14.040 and ISO 14.044 and Guidelines such as The International Reference Life Cycle Data System (ILCD) Handbook of the European Platform on Life Cycle Assessment or the Product Environmental Footprint (PEF). Task 3.3 started in month 7 and the work has been lead by LEITAT, with the collaboration of LME in order to obtain the data needed. During the first months of execution, the methodology has been defined for the environmental assessment of the PV-MOREDE device.

The goal and the scope of the study have started to be defined according to the goals of the project and the guidelines of the sector. The limitations of the studied system, its boundaries and the functional unit have also been established. To make the analysis easier, the system has been divided in several interconnected subsystems.

The inventory of the data, which is data and calculation procedures's collection to quantify the inputs and outputs through the system boundaries, has been started, as well. Currently, LEITAT in working on the data gathered by LME and is identifying the gaps in order to ask LME for a second collection of information. Datasheets with the detail of data needed from the PV-MOREDE processes (including not only direct inputs and outputs for production, distribution, use and final disposal, but also indirect inputs and outputs such as the initial production of the energy used, for instance) is being elaborated by LEITAT and sent to LME. The current work, therefore, is focused on completing the inventory.

The most likely baseline scenario has been defined taking into account other technologies or approaches such as Deutsche Solar and First Solar, in order to further assess the environmental benefits achieved by PV-MOREDE device.

No major deviations occurred during the first months of execution of the WP and tasks are being developed according to the DoW.

During the following months, the results derived from the inventory analysis will be further processed in terms of potential environmental impacts.

Criticality: Delayed caused by some economic difficulties (manufacturing costs underestimated) and changes required by the authorities for norm compliance. Due manufacture delay, the data collection and other actions foreseen in the project (WP4, WP5 and WP6) are consequently delayed compared with the initial schedule.

WP4 – works are in standby because is waited for first device running and performances monitoring

WP5 – First draft of Business Plan was prepared by IGC, but work are still in progress for the above mentioned reasons and for first documented device performances:

WP6 – some delays occurred and were related to the device manufacture end of works. Website is on since March 2014, it is 2 languages, and it is linked at partner websites. Initial Project information sheets were issued. During the kick-off meeting partnership agreed for press release used for initial project dissemination via web from partner websites and via magazines. Both institutional and private organisations were contacted, a database is now available and updated. Dissemination, communication and workshop plans, were issued and are updated, despite of non implemented yet.

Del. N° [1]	**Deliverable name** [1]	**Type**[1]	**WP N°** [1]	**Delivery date from Annex I** [1]	**Delivered (yes/no) and status (draft/final)**	**Submission with report**[2]	**Forecasted delivery date**	**Comments on progress**
1.1	Kick off meeting / Project review	Other	1	31/10/2013 (1 months)	Yes/final	PR1	02/12/2013	-
1.2	Consortium Agreement	Other	1	30/11/2013 (2 months)	Yes/final	PR1	14/05/2014	-
2.1	Report about national legislation	Report	2	31/03/2014 (6 months)	Yes/final	PR1	30/09/2014	-
2.2	Analysis of barriers\opportunities deriving from national legislation. PESTEL Analysis	Report	2	31/03/2014 (6 months)	Yes/final	PR1	30/09/2014	-
3.1	First PV-MOREDE manufactured	Prototype	3	31/05/2014 (8 months)	No/draft			Economic difficulties, norms changed

3.2	Vehicle homologation	Other	3	30/06/2014 (9 months)	Yes/final	PR1	30/09/2014	Received on 4/09/2014
3.3	Second PV-MOREDE device manufactured	Other	3	30/09/2014 (12 months)	No			-
3.5	Initial design containing the drawings of the system and related new components, the calculation and structural analysis	Other	3	31/07/2014 (10 months)	Yes/Draft	PR1	30/09/2014	-
3.7	Draft LCA including definition of most likely baseline scenario Impact Assessment	Report	3	30/09/2014 (12 months)	Yes/final	PR1	30/09/2014	-
4.1	Presentation slide	Other	4	31/07/2014 (10 months)	No/draft			Draft to be completed
4.4	MADT Platform developed for international application	Report	4	31/07/2014 (10 months)	Yes		30/09/2014	-
4.5	Standard Contracts	Report	4	30/09/2014 (12 months)	No			Draft Standard Italian contracts completed
4.6	Marketing activities report	Report	4	30/09/2014 (12 months)	No			
4.7	Exploitation plan and revision	Other	4	30/09/2014 (12 months)	No			
4.8	Participation to fairs and organisation workshops	Report	4	30/09/2014 (12 months)	No			Postpone for delay
5.1	Business and marketing plan	Report	5	30/09/2014 (12 months)	Yes/Draft	PR1	30/09/2014	Draft due to delay
5.2	Management Summary	Report	5	30/09/2014 (12 months	Yes/draft	PR1	30/09/2014	Draft due to delay
5.3	Marketing analysis including PESTEL,	Report	5	30/09/2014 (12	Yes/draft	PR1	30/09/2014	Draft due

	SWOT and Porter Analysis			months)				to delay
5.4	Strategy and implementation Plan	Report	5	30/09/2014 (12 months)	No			-
5.5	Call for Corporate Image Award Competition	Other	5	31/03/2014 (6 months)	No			-
5.6	FMECA Analysis and Exit Strategy Plan and related updating	Report	5	30/09/2014 (12 months)	No			-
6.6	Project Website	Other	6	31/03/2014 (6 months)	Yes/Draft	PR1	30/09/2014	Two languages are uploaded
6.7	Communication Index trend & Web Analysis Report	Report	6	30/09/2014 (12 months)	No			
6.9	Dissemination plan and updating	Report	6	30/09/2014 (12 months)	Yes/Draft	PR1	30/09/2014	

[1] *This information must be identical with your List of Deliverables in Annex I of your Grant Agreement.*

[2] *Please indicate the report with which you have submitted the deliverable (PR1, IR, PR2,…).*

Please upload all due deliverables with public dissemination level (PU) at your project website for public download. Note: Deliverables uploaded at an internal website area are not considered as being uploaded for public download. Please ensure that the reference to EACI funding, the Eco-Innovation logo and the legal disclaimer are indicated in your published deliverables.

1.2 Identified deviations, problems and corrective actions taken in the period – *If any, identify the nature and the reason for the deviation or encountered problems (technical, financial or organisational), identify partners involved, clarify impacts on the activities and deliverables, present the strategy to overcome them; in case of deviations described in the last report describe how you have managed to get back on track.*

Some delayed occurred in WP3 implementation, influencing all related WPs consequently (WP4, WP5 and WP6). In WP3 task 1, device manufacturing, was delayed cause some economic difficulties of LME related to lower overall economic performances (lower income) and higher manufacture costs compared with initially estimated ones. Moreover some changes in design were required for better compliances to the norms, and consequently technical solutions and re-engineering activities were needed (for instance gas emission control).

This has influenced WP4 because no demonstration activities (market demonstration, workshop promotion, fairs participation) were allowed before device end of manufacture. Similarly and prudently, communication plan to private and public organisation was put in stand-by until the end of device manufacture and its test.

For contract agreement set up, a baseline of manufacture cost structure would be needed for mark-up / price definition, and currently manufacture cost analysis is still in progress.

Influence on WP5 is consequent, since from the technical point of view some feedback related to the performances are still waited (productivity for instance); cost / benefits analysis feedback is needed for a coherent strategy definition, cash-flow simulation / estimation.

Influence on WP6 is determined by a prudent approach, since all partners prefer to avoid any partial communication.

For Financial problems, LME is developing a strategy to overcome the matter working on both sides: 1) improving their own income by developing marketing activities; b) developing new strategic partnerships with new financiers. Current state of art include negotiation with Venture Capital and new private shareholders entry.

1.3 Progress regarding performance indicators – *Assess performance indicators listed in Annex I of the Grant Agreement against impacts of the action achieved so far. Please update the excel table of the Annex II attached to the Grant Agreement.*

No production / process data were gathered since the machine doesn't start up yet. Methodical and systematic data collection process (for LCA and process characterisation are foreseen by December at latest).

For that reason the performance indicator related to mobile recycling device authorisation can be positively updated at level 01. The same value for entry in transnational market (Italy).
Respect the performance indicator "Patent" LME successfully achieved the declaration of novelty, invention and industrial application on date 27/08/2014.
The updated excel table of Annex II is attached at the end of this PR1.

2 Progress regarding market uptake and exploitation – *remember that Eco-Innovation aims to multiply the impacts of the projects' solutions and mobilise a wide market uptake, reaching a critical mass during the project and in the short to medium term. Describe here your progress to achieve these objectives.*

As above mentioned, market uptake and exploitation activities are not systematically initiated yet. After first dissemination and press release, and thanks to the website diffusion, some important requests for panel recycling services or device sale / rent were received by LME. At current time the preliminary commercial negotiations are ongoing. All the requests are coming from out of EU (Swiss, Turkey and Canada). The virtual feedback is extremely positive because the expressions of interest currently received (despite no communication plan implementation) in terms of GW to be treated and in terms of important prospective customers and are strongly motivating. The estimated start

for systematic and organised market uptake activities are planned for the beginning of the new year, when running test of the device will be ended .

3 Work plan for the next period (max 1 page)

3.1 Planned activities in the next period – *Give an outlook on planned activities for the period until the next report (on-going work packages, tasks per partner, due deliverables), consider any strategy developed in section 1.3)*

For convenience the following explanation is split in WPs:

WP1 – There are no different activities respect that ones foreseen into the project time frame. Communication between partners will be improved for co

WP2 – residual activities for norms and laws state of art updating are foreseen when WP4 task3 will restarts. Cause delay in device manufacturing, standard contracts are not drafted yet, and for a better and sure set up an updated state of art will be needed to assure that only compliant devices and related recycling services will supplied.

WP3 – All the efforts are addressed to finish the first device and to allow running tests. Considering the authorisation already achieved from italian Regione Molise for freedom to operate on Italian territory, only few components are still missing, and LME estimate a full operating capacity for the end of the current year.

WP4 – Activities have been re-planned and start is foreseen for the beginning of the 2015. Workshop plan was revised as well as Communication Plan. Contract standard agreement is ready for Italian territory, for the rest of European countries will be prepared on demand. Marketing plan will be prepared by end of February 2015 when running test of the device will be finished.

WP5 – Business Plan will be prepared according with the WP3 end of tasks and WP4 progress. First final issue is foreseen for end of February 2015.

WP6 – Dissemination Plan was reviewed and rescheduled. All related activities are influenced by the WP3 end, so that a new revision of Communication Plan will be likely necessary when the device will be completely running. In the meantime website will be maintained and updated.

3.2 Planned meetings, activities related to market uptake and dissemination activities – *Give an overview on your planned project meetings (date, location, main topic, etc.), planned activities to foster the market uptake, and dissemination activities (date, location and main topics of fairs, conferences, etc.), at least for the period until the next report.*

Project meetings are foreseen quarterly, to keep under control project implementation. First project meeting is forecasted in November 2014 at LME its main topics will be:

- Project Work Plan review:

- State of art of device manufacture
- State of art of design review
- Data collection procedures approval for LCA
- Marketing Plan first release and review of related Workshop, Communication and Dissemination Plan, which include:
  - Demonstration Plan
  - Website update

- Text approval for Call Brand Award release including Brand Guideline draft
- Work plan approval for 2nd device manufacture

Second project meeting is forecasted in February 2015 at LEITAT, its main topics will be:

- Project Work Plan follow up:
  - Test results analysis discussion and first LCA evaluation
  - Process standardisation results
    - First mass/energy balance evaluation and first environmental indicators estimation
  - First Performances indicator approval for public release / dissemination
  - Follow up from demonstration activities
  - Marketing Plan implementation follow up
  - Communication and dissemination plan follow up

To foster the market uptake we are intended to shorten the time frame for demonstration activities by using device in real operational condition. Thank to this approach we intend to reach a both technical and commercial feedback from selected but representative end users sample, with the aim to fine tuning further production of lots and review communication strategies, for a subsequent wider scale demonstration plan.

Dissemination Plan will be approved during the first project meeting, and will be coherent with the demonstration plan results, so that positive results and dedicated communication strategies could be used during fairs and seminars.

4 Other issues (max 1 page) - *If any, indicate other issues*

5 Overview on hours spent (template downloadable from our website http://ec.europa.eu/environment/eco-innovation/managing-projects/contract-finance/index_en.htm)

Please see next page.

Please note that details on partners hours - although recommendable - are optional.
You may report only the total hours per Work Package

Project Hours (Partner / Workpackage)

Project Number and Acronym	ECO/12/333078 - PV-MOREDE
Reporting period (M1 to MX)	M1 to M12
Deliverable (PR, IR, etc)	PR1

Total Project Hours:	**15.134,0**
Total Spent Project hours:	**3.776,0**

Hours x Partners	WP1		WP2		WP3		WP4		WP5		WP6		WP7		WP8		WP9		**Total hours x Partner**	
	Annex I*	Spent**	Annex I*	Spent**	Annex I*	Spent**	Annex I*	Spent**	Annex I*	Spent**	Annex I**	Spent**	Annex I*	Spent**	Annex I*	Spent**	Annex I*	Spent**	Annex I*	Spent**
Partner 1 (LME)	636,0	214,0	80,0	45,0	2.480,0	653,0	1.080,0	40,0	192,0	45,0	384,0	49,0							**4.852,0**	**1.046,0**
Partner 2 (PVC)	16,0	16,0					288,0				72,0	49,0							**376,0**	**65,0**
Partner 3 (LEITAT)	240,0	67,0	440,0	336,0	4.200,0	1.058,0	1.000,0	101,0	550,0	153,0	60,0	18,0							**6.490,0**	**1.733,0**
Partner 4 (UNIFI)	80,0	10,0	1.080,0	877,0	2.160,0	39,0		2,0	80,0	2,0	16,0	2,0							**3.416,0**	**932,0**
Partner 5																			**0,0**	**0,0**
Partner 6																			**0,0**	**0,0**
Partner 7 (optional)																			**0,0**	**0,0**
Partner 8 (optional)																			**0,0**	**0,0**
Partner 9 (optional)																			**0,0**	**0,0**
Partner 10 (optional)																			**0,0**	**0,0**
Partner 11 (optional)																			**0,0**	**0,0**
Partner 12 (optional)																			**0,0**	**0,0**
Total hours x WP	**972,0**	**307,0**	**1.600,0**	**1.258,0**	**8.840,0**	**1.750,0**	**2.368,0**	**143,0**	**822,0**	**200,0**	**532,0**	**118,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**	**0,0**		

% Project Hours already spent x WP (as compared to Annex I)	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9
Partner 1 (LME)	33,6%	56,3%	26,3%	3,7%	23,4%	12,8%			
Partner 2 (PVC)	100,0%			0,0%		68,1%			
Partner 3 (LEITAT)	27,9%	76,4%	25,2%	10,1%	27,8%	30,0%			
Partner 4 (UNIFI)	12,5%	81,2%	1,8%		2,5%	12,5%			
Partner 5									
Partner 6									
Partner 7 (optional)									
Partner 8 (optional)									
Partner 9 (optional)									
Partner 10 (optional)									
Partner 11 (optional)									
Partner 12 (optional)									
Total % x WP	**31,6%**	**78,6%**	**19,8%**	**6,0%**	**24,3%**	**22,2%**			

* As originally proposed
** From M1 to the time of reporting.

Updated excel table of Annex II

Executive Agency for Competitiveness and Innovation CIP Eco-innovation first application and Market Replication Projects Call 2012 Call Identifier: CIP-EIP-Eco-Innovation 2012					
INDICATORS					**PV-MOREDE**
At the end of the project					
Objective	**Indicators**		**Absolute Impact**	**Relative Impact**	**Comment**
Improved Environmental Performance	Greenhouse gas emissions	CO2	tons / year	in % change to baseline	
		Methane	tons / year	in % change to baseline	
	Air quality	Particulate matters	in ppm		
	Reduction / substitution of dangerous substances	Irritant / Corrosive			
		Mutagenic / Carcinogenic			
		Toxic			
		Persistent / Bioaccumulative			
		SOIL POLLUTION	0,11-0,69	TONS	NOT MEASURABLE YET
	Waste management	Prevention			
		Waste minimization			
		Reuse of waste / Substance recovery	5.699	95%	NOT MEASURABLE YET
		Material recycling	5.135	95%	NOT MEASURABLE YET
		Waste diverted from landfills	6.100	TONS	NOT MEASURABLE YET
		Hazardous waste	1	TONS	NOT MEASURABLE YET
			401	TONS	NOT MEASURABLE YET
Better use of natural resources	Reduced resource consumption (excluding energy)	SiO2	4.498	90%	NOT MEASURABLE YET
		CaO and Na2O	412	12%	NOT MEASURABLE YET
	Water	Reduced water consumption	liters / year	in % change to baseline	
	Energy	Energy from RES	kwh / year	in % change to baseline	
		Reduced energy consumption	kwh / year	in % change to baseline	
Economic Performance / Market Replication	Business development / Market replication		2	not applicable	1 DEVICE FINISHED READY FOR TESTING
	Market potential	market size in million Euros	1	not applicable	NOT MEASURABLE YET
		market size in number of customers	9.000	not applicable	ONE DEVICE AUTHORISED
	Entry in new transnational markets		4	not applicable	ONE DEVICE AUTHORISED IN ITALY
	Entry into different sectors			not applicable	
	Reduction of cost per unit or process		41€/TON	48% LESS	NOT MEASURABLE YET
	Payback Time	capital invested / net income	3	not applicable	NOT MEASURABLE YET
	Patents	1	Euroepan	not applicable	ONE PATENT APPLIED
Others					