

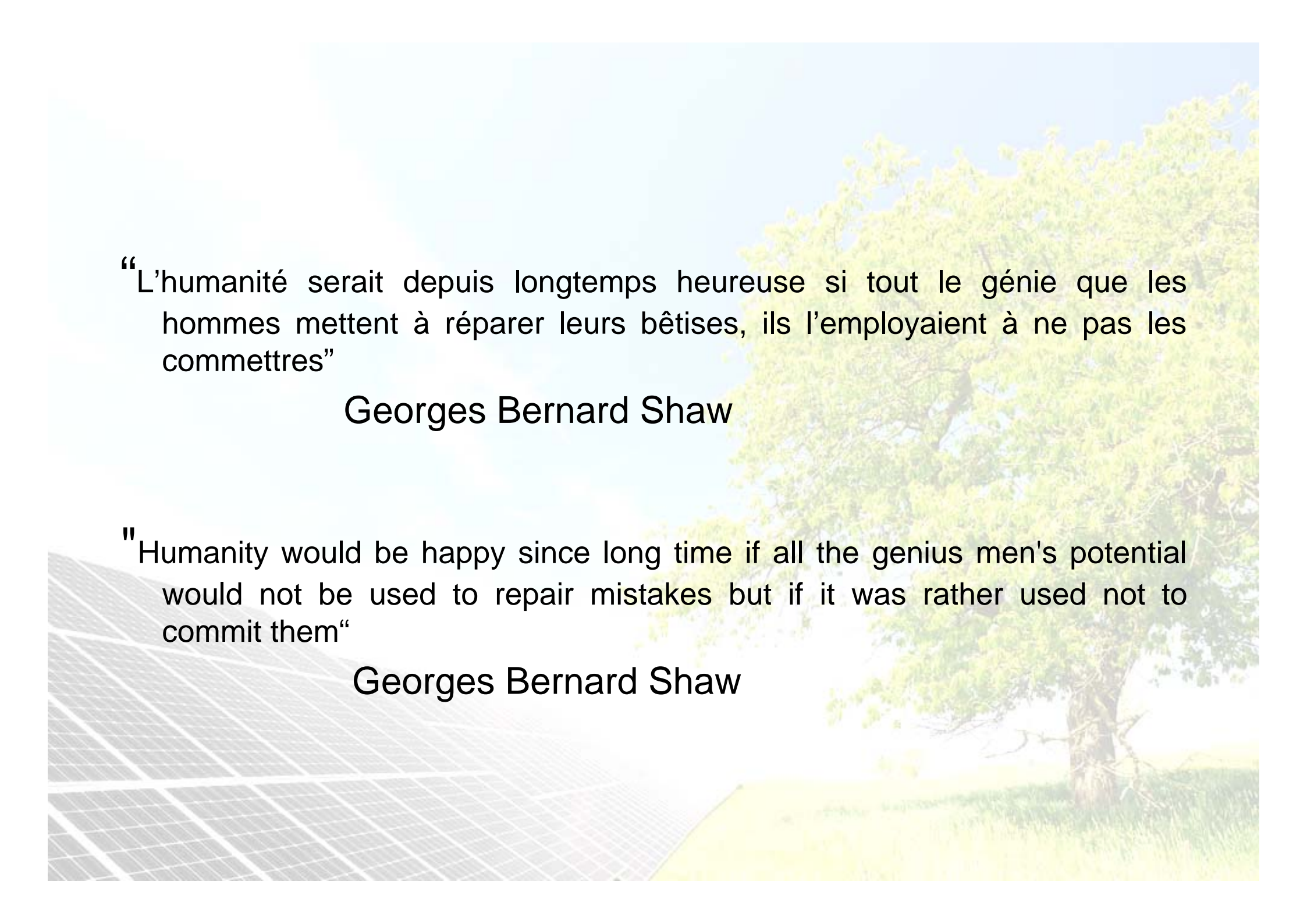
LEGEA
privind promovarea utilizării energiei din surse regenerabile

**Analysis and suggestions on
renewable energy development in
the Republic of Moldova**



**European
Business
Association**

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“L’humanité serait depuis longtemps heureuse si tout le génie que les hommes mettent à réparer leurs bêtises, ils l’employaient à ne pas les commettres”

Georges Bernard Shaw

"Humanity would be happy since long time if all the genius men's potential would not be used to repair mistakes but if it was rather used not to commit them“

Georges Bernard Shaw

Facts

The reality

- Energy supply in Moldova is depending between 96 to 98% of imported resources.
- Moldovan electricity network is not up to date that implies a low performance rating.
- Moldovan electricity network has huge energy losses during its transportation. Losses measures in certain area are up to 20%, the medium average losses level is around 12 %.

The effects

- High dependency on energy regarding the supply of the resources from foreign countries.
- No control regarding the energy cost for citizens in case of major event either geo political or for technical reasons (pipeline break-down, extreme weather conditions,)

The solutions

Work on to decrease the energy dependency, but under certain conditions:

- Developing green solution with no cost, or temporary lower cost for the Moldovan government, for the citizens, for the EU.
- Developing renewable energy solutions taking into account the network weakness and trying to avoid at that point network upgrade cost, which will be difficult to finance.
- Developing renewable energy solutions in the respect of the territory management, renewable energy is made to be consumed near the place it is produced, no need to have concentrated and huge projects.
- Developing renewable energy solutions promoting the self-energy consumption and the net metering to prepare the Moldovan network for tomorrow with small scaled energy storage and able to be managed and used by the distributor to optimize the network load.

Why renewable are important especially for Moldova ?

- Renewable are the best and the most reliable long term solutions for decentralized energy productions.
- When we mean renewable we mean a mix of energy having all of them their strong and weak points, and not a focus on one type of renewable which has no sense economically :

– Biomass	Works in small scale, very efficient as heating device, need raw materials to work, can limit the development if local raw materials come into
– Wind energy	Works in many place in Moldova, but alternative production. The production is 2 to 3 times less during the summer than spring or autumn. Based on mechanical devices to produce energy need a constant maintenance. Life span 25 years.
– Solar energy	Works everywhere, but alternative production. The production is 3 to 4 times more important during summer compared to winter. No mechanical part, light maintenance cost . Life span over 40 years.
– Biogas	Works everywhere, but needs a huge amount of material to be transformed into gas able to burned by the generator. High dependency on agriculture animal dejection collection. Life span of the generator 5 years.
– Hydro energy	Clean and silent, but is pending on to the river level. Danger is coming from the weather changes and the lack of water during summer period which lower the production capability.
- When we mean renewable energy we mean flexibility and territory planning. It means judicious dispatch of the renewable according to the territory needs and the local consumption.
- Renewable are made to be consumed near the production place, it means no needs for expensive electric line transportation, it means no energy loses between the producer and the consumer, it means more safety compared with centralized energy production, even in deep crisis situations.

What are the positive points of the new law ?

- **NET METERING** : that decision will change the Moldovan energy consumers habits in a long term positive way.
 - * It will allow citizens and companies to produce themselves and consume electricity
 - * It will give a vision for the next 50 years for the energy cost to all of the NET METERING users, allowing them to have in a medium term free energy, increasing in the same time their purchasing power.
 - * It will be the premises of the future “intelligent net metering and national individual energy storage program” as that is now launched in Germany. It means green energy available, day and night, balanced and managed by the energy distributor.
- **The law at least will now probably exist** : This law, if well balanced, can be the starting point of the "energy revolution" in Moldova, reversing the status of a full dependency situation.

Apart from the change in the energy mix of the country, it is the opportunity of a long term job creation source, all around the country without distinction of region as renewable are able to be deployed everywhere. (apart from the wind which has dedicated spots).

What are the weak points of the new law ?

- *The law is not giving any power limit for project : Why doing a 50 MW project when just 2 MW are needed in that area?*

- Project not designed according to the local needs of energy = waste of production = higher cost
- Project not designed according to the electricity network = energy lost in transport = higher cost

Renewable energy means territory planning and not concentration in one single point.

Our suggestion :

Apply in case of pure energy production deemed to be resold on the network, a power limitation of 2 MW per project. (The argument of "bigger project= lower cost" is not true anymore or not significant). No other project can be constructed within an area of minimum 2 km.

- The law is not allowing project made with second hand material like second hand wind turbine

- Second hand wind turbines allow much cheaper energy production cost (6 to 7 € cents) close to market price instead of 10 to 12 € cents for energy produced by new wind turbine .
- No risk is supported by the citizens, by the government, the risk stays the problem of the investor.
- The only risk we see : having cheap energy !

Before running we must learn how to walk, the target in Moldova is to keep the energy cost low, not high

Our suggestion :

No discrimination with second hand green equipment, the national target is to have the lowest cost of energy. Keeping that discrimination would be the same as not allowing import of second hand cars and oblige everyone to buy a brand new car!

What are the weak points of the new law ?

- The law is giving for the NET METERING a limit of 1% of the volume of energy consumed in Moldova, and limit the eligibility for equipment of not more than 100kW.
 - The 1% limit of self-consumption of green energy seems to be totally in opposition with the target of having a country with less energy dependency.
 - The limit of 1% is fully discriminatory for Moldovan citizens, “the first arrived, the first served”, will give no chance for most of them to participate into the green Moldovan energy movement.
 - The 100 kW limit is discriminatory for companies which will not be able to size their own green equipment to enhance their competitiveness in the future having control on their energy cost.

OUR suggestion:

- Set the limit to 5% of the energy consumed in Moldova (that volume is the energy produced and not consumed by the users then **injected** into the network) .
- Cancel the limitation for hybrid solar energy equipment which are including energy storage (They contribute to the future intelligent net metering system and storage management).
- Cancel the 100 kW limitation as it is totally discriminatory for industry and companies giving them no chances to adopt a green attitude for their electric energy consumption.

What are the weak points of the new law ?

- The law application method will stop for almost 6 to 12 month the development of renewable energy project except the net metering, as the new law will be applicable as soon as it is voted by the parliament. The direct consequences will be
 - Freezing of all projects already in construction process as they will not be able to be grid connected.
 - Freezing of all project having completed the found and equity process as well as construction permit.
 - In all the cases , that means huge Investment losses, sending a bad signal to the investors community.

OUR SUGGESTION

- **Apply the new law in 2 steps**
 - » Immediate application of the net metering part as it impact directly the development of renewable energy to the Moldovan citizens.
 - » Application of the tender part of the law when the process will be fully ready and validate by the government, in between the existing law still be into force.

Don't copy mistakes already made in other countries since years on the renewable energy development

- **High feed-in-tariff (FIT)**: the history shows that giving a too high incentive makes the energy cost to be too high with a significant impact on the energy cost for citizens. Incentive must be reasonable to preserve the energy cost (but also not to be too low) to avoid demotivating the investor.
- **Fragility of the tender procedures** : example :
 - France tender for 100 to 250 kW power units : average price validated after last tender January 2014, 16,83 €cent per Kw/h
 - Official Tariff : 13.81 €cents to 14.54 €cents for power from 0 to 100 kW no tender applicable.

Does that shock you or not ? The tender shows that for bigger project, normally less expensive, the kW/h price is 20% more than the official FIT for installation less than 100kW not impacted by tenders.

- **Size of the projects** :Most of the projects made in the last past years in Europe have one common target , being purely speculative. The results is the development of huge project in the middle of nowhere, with production capability not in accordance with the network or the local energy consumption. That has resulted into increase of the price of the project construction by renewing the local energy network not adapted to carry such power, and by induction it increased the energy losses during its transport. Why creating with renewable energy the same model as the existing centralized energy ? That is a question.

The **real** construction cost of renewable in 2014 (without VAT) (including land & side cost)

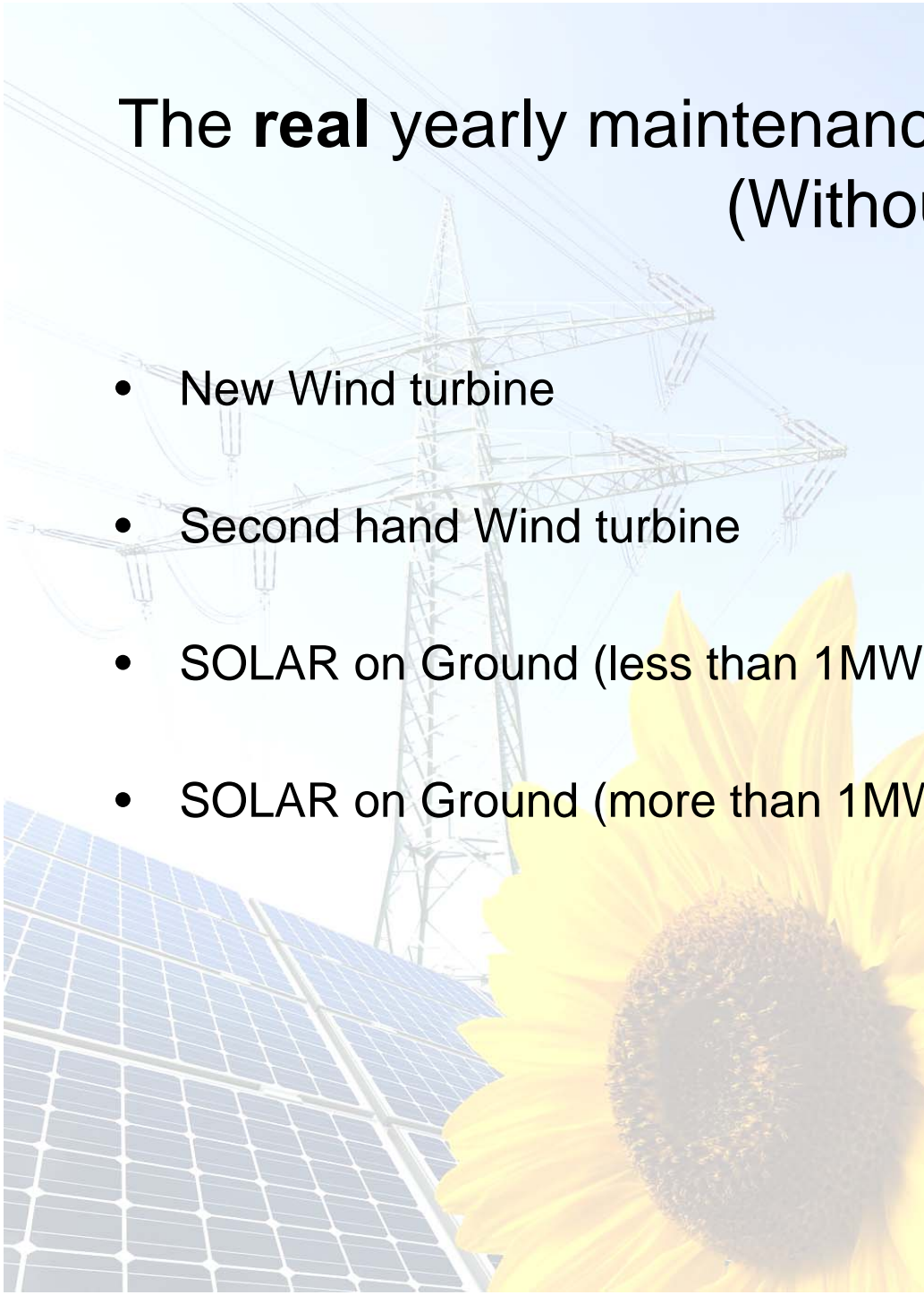
- New Wind turbine (1 to 2 MW)
- Second hand Wind turbine
- SOLAR on Ground (less than 1MW)
- SOLAR on Ground (more than 1MW)

1,20 € per W peak

0,55 € per W peak

1,10 € per W peak

0,98 € per W peak



The **real** yearly maintenance cost of renewable in 2014 (Without VAT)

- New Wind turbine
- Second hand Wind turbine
- SOLAR on Ground (less than 1MW)
- SOLAR on Ground (more than 1MW)

19 € per kW peak

13 € per kW peak

12 € per kW peak

9 € per kW peak