Paradigm Academic Press
Innovation in Science and Technology
ISSN 2788-7030
DEC. 2022 VOL.1 NO.5

Manual Production of Green Current, Green Hydrogen and Green Oxygen for the Benefit of Daily Income of Poor People of Any Country

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doi:10.56397/IST.2022.12.02

Abstract

From Kasmir to Kanyakumari, as India is having many poor people with no daily income, based on humanity, we are making an advanced technical attempt to help them with a possible daily income by manual production of green current, green hydrogen and green oxygen. To have sufficient fuel, to have an efficient fuel and to reduce pollution levels, world transportation system badly needs eco-friendly hydrogen and the whole earthy environment is in a serious quest for oxygen. To resolve the above basic issues, it is planned to produce hydrogen and oxygen by means of alkaline electrolysis with external magnetic field (IIT, Mumbai, India) for a better productivity, accomplished by electricity produced from medium capacity alternators operated by human physical energy. To fulfill this requirement, it is planned to take the help of illiterates, healthy beggars, Rikshawala like poor people and farmers having no crop field or no crop yield. With efficient pedaling and gearing mechanisms associated with heavy fly wheels, 10 of 20 persons forming as a group can be allowed to run any alternator round the clock in 8-hour shift system for 4 alternative hours without any physical strain. By considering our proposal, 1) Hydrogen fuel required for running Fuel cells and Internal combustion engines can be generated in large quantity with a de-central system having unlimited number of medium capacity alternators spread across entire India. 2) Generated oxygen can be released to atmosphere and air pollution levels can be diluted to a greater extent across India. 3) Recycled waste water or sewage water can also be used. 4) Multiple number of small scale units can be set up with 5 to 10 alternators and production of hydrogen by electrolysis can be increased from 5% to (30 to 40) % of total production of hydrogen. 5) To some extent, as long as Hydrogen is considered as a fuel, employment problem, hydrogen scarcity and air pollution issues can be resolved. With further study, research and direct involvement of state and central governments, industrialists, scientists and engineers, this proposal can be implemented a full-fledged manner from Kashmir to Kanykumari. Our proposal can be considered as one of the best coordinating schemes for-fulfilling Indian transportation fuel needs, Indian poor people struggling for getting daily wages and saving mother earth from CO2, SO2 and NOx like harmful gases. This project can be implemented in any country having poor people.

Keywords: alternator with permanent magnets, electrolyzer with external magnetic field, human physical energy, GHOTEEs

1. Introduction

In this paper, in a workable approach, with reference to poor people of India having no regular daily income, it is planned to discuss and resolve three major issues connected with unemployment of poor people having no guaranteed daily earnings, burning of fossil fuels and need for producing eco-friendly Hydrogen and Oxygen. I sincerely appeal the Indian social science community to look into the proposed technical project based on

humanity.

Content of the paper is arranged in the following way. Fuel, pollution and unemployment issues have been discussed in section 2. Need for production of green hydrogen has been discussed in section 3. Man power selection for running alternator, selecting alternator capacity and mechanism of running an alternator with selected man power have been discussed in sections 4, 5 and 6. Electrolysis of water by advanced water electrolyser having external magnetic effects has been discussed in section 7. General discussion, various applications and conclusions have been presented in sections 8, 9 and 10 respectively.

2. Crude Oil, Pollution and Employment of Poor People

Imports, exports, natural resources, science & technology and employment seem to play a key role in any country's economical growth and international currency value (World Economic Situation Prospects, 2020; Outlook, n.d.). In future—air, land and water pollution levels (DTE Staff, 2021; Madhumitha Jaganmohan, 2021; Dr Bhola Ram Gurjar, 2021) seem to play a key role in deciding currency value in international market. It may be noted that, spending money on recycling of air, land and water will certainly make a deficit in national economy.

2.1 Crude Oil

Russia-Ukraine war forced world nations to open their third eye on two aspects (Sneha Patro, 2022; Jessica, 2022; Dave Keating, 2022). First aspect is to search for alternative fuels for petrol, diesel and gas and second aspect is to have their own nuclear weapons. Crude oil price is every day increasing in the international market and as a result, prices of essential commodities are increasing every day. In India, day by day fuel price is increasing. Thus, on economical grounds, every country is facing a challenge in stabilizing its currency value in the international market owing to fluctuations in crude oil cost. One most hidden and notable point is that, to reduce the consumption of fuel oil and to control pollution, scientists and engineers are seriously working on producing electric power with nuclear power plants. But it is very unfortunate to say that nuclear power plants are producing tons of high level nuclear radioactive (A. Andrews, 2008; Ashutosh Goel et al. 2019) that is very dangerous to the survival of mankind.

2.2 Pollution

Pollution point of view, due to various factors like production of electric power by thermal, coal and oil burning, combustion of transportation fuels and industrial burning of fossil fuels,

1) Temperature is increasing due to greenhouses gasses day by day causing a notable global warming by roughly (0.15 to 0.2) deg. C per every 10 years (NASA Goddard Institute for Space Studies, 2022; NOAA National Centers for Environmental Information, 2022).

2) In major cities of the world, pollution levels are increasing in the atmosphere and people are suffering and dying with various kinds of lung diseases (The Hindu, 2020).

3) Due to global warming, naturally occurring seasonal changes are getting disturbed badly causing unwanted rains, unexpected floods and droughts.

4) It is expected that, by 2060, there will be a very serious scarcity of fossil fuels (METGroup, 2021). See the below Figure 1 for the energy consumption breakup percentages of various energy sources.

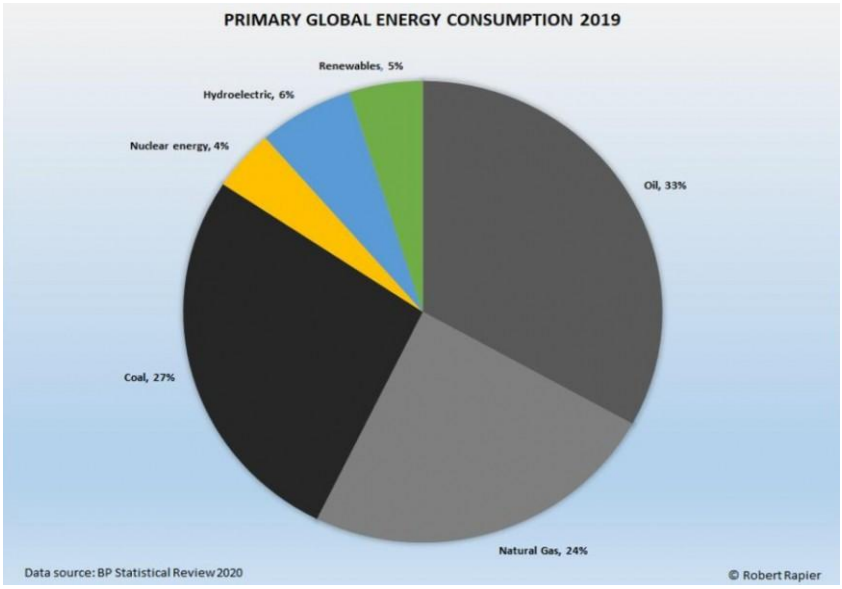

Figure 1. Various energy sources and their proportions

2.3 Employment of Poor People

Employment point of view, in India, every day—literates and illiterates are facing a serious problem in getting daily wages. Every year, many medium and small scales industries are getting closed due to various reasons (Newsclick Report, 2021). In some schools, colleges and industries, salaries are being paid for every three to four months. It is very unfortunate to say that healthy beggars, Rikshawala, daily wage labourers and formers like many poor people are badly struggling in maintaining their normal family needs. Modern agricultural equipments are badly affecting the daily earnings of village labourers. Even though, Indian government is implementing various schemes to counter unemployment issues, many people are forced to leave their home villages for survival purpose. It may be noted that, according to Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) (Mahatma Gandhi National Rural Employment Guarantee Scheme, n.d.), daily wage in Madhya Pradesh is Rs. 204 and in Sikkim, it is Rs. 333. Average daily wage is around Rs. 270.

3. Need for Production of Green Hydrogen

United States and European countries are spending lot of money in finding alternative sources of fossil fuels. As of today, Hydrogen gas seems to be 'one best' alternative (The Global Hydrogen Review, 2021). Major advantage of Hydrogen is that its energy output is 3 times greater than fossil fuels. Major disadvantage of hydrogen is that hydrogen cannot be considered as a primary fuel, and it has to be extracted by other means and needs a lot a power input. It may be noted that, if production of hydrogen is no way associated with environmental pollution, it can be called as Green Hydrogen. Nowadays, giving a great importance to environment and by considering various methods of water electrolysis techniques, scientists and engineers are trying to produce green Hydrogen in large quantities. But all the techniques are badly need external electric power in large quantities. To some extent, it is planned to consider large scale wind, solar power and tidal power plants for generation of electricity required for electrolysis of water. Here it's very important to say that,

1) Directly and indirectly production of Hydrogen gas is involved with production of unwanted Carbon-dioxide gas in large quantities.

2) Even though it is cheap, (90 to 95) % of produced total hydrogen gas seems to be associated with processing of steam reforming of natural gas, oil/naphtha reforming and coal gasification.

3) Only (4 to 5) % of produced total hydrogen gas is associated with electrolysis of water.

4) Only (1 to 2) % of produced total hydrogen gas is associated with renewable energy sources like wind power, solar power and biomass.

Keeping the above issues in view, it is planned to produce green hydrogen in four steps.

Step-1: To implement advanced water electrolysis technology.

Step-2: To run the electrolysis equipments with 5 to 6 kW alternators.

Step-3: To engage man power for running the alternators.

Step-4: Man power can be chosen from poor people of India having no guaranteed daily earnings.

In a nut shell, without using the power grid electrical energy, green hydrogen that is required for transportation vehicles can be generated by electrolysis of water with electricity produced by medium power alternators that are run by the physical energy of poor Indian laborers.

4. Horse Power, Man Power and Alternator

One horse power is equal to the power needed to move 550 pounds of weight to one foot in one second (Stevenson, R. D. & Wassersug, R. J., 1993; Britannica, 2019; Jmdonev, 2021; Abigail R. Mechtenberg, Kendra Borchers, Emanuel Wokulira Miyingo, Farhan Hormasji, Amirtha Hariharan, John Vianney Makanda & Moses Kizza Musaazi, 2012). It is the power needed to move 33,000 pounds of weight to one foot in one minute. Following these definitions, it was established that,

1) Work done by a horse is equal to the collective work done by 10 humans.

2) Maximum output capacity of a horse is 15 hp.

3) Maximum capacity of a human is 1/10th of 15 hp and is equal to 1.5 hp.

Based on these numbers and to proceeding further, it is planned to consider the average capacity of a horse as 7.5 hp. Hence, average capacity of a human can be considered as 0.75 hp. Thus, for 10 humans, average capacity can be expressed as, 7.5 hp. Considering SI units, average capacity of 10 humans can be considered as, 7.5*0.75 = 5.6 KW. Following this calculation and considering the efficiency as 80%, it is planned to consider an

alternator of capacity 5.6/0.8 = 7 kVA. Clearly speaking, 10 humans collectively can run an alternator of capacity 7 kVA and with 80% to 90% efficiency, can collectively produce 6 kVA.

5. Fixing the RPM of Alternator Run by Human Power

In general,

1) High speed alternators are generally manufactured to rotate at 1500 rpm or 3000 rpm.
2) Due to tiredness and breathing issues, 10 human beings also, cannot run any alternator at 1500 rpm for a short span of time.
3) Hurry-burry and continuous work load causes any human being to feel tiredness at an early time compared slow and steady work.
4) Nowadays, for generating electric power by windmills, alternators are being designed for a slow speed of 300 rpm (Alex Kalmikov & Katherine Dykes, n.d.; Alexander Kalmikov, 2017).

Considering the above points in view, to run a 7 KVA alternator with human beings, it seems logical to select a possible slow speed of 300 rpm (San Luis Obispo, 2013). It needs further study and research.

6. Generating Green Electric Power While Minimizing the Human Tiredness

By arranging 10 standing cycles on left and right sides of the alternator and by engaging 10 persons for pedaling the 10 cycles (The Science of Cycling, n.d.; P. D. Soden & B. A. Adeyefa, 1979; Bini, R. R., Hume, P. A., Croft, J., & Kilding, A. E., 2013; Quintana-Duque, J.-C., Dahmen, T. & Saupe, D., 2015; Vidal, Adrien & Bertin, D. & Drouot, F., Kronland-Martinet, Richard, Bourdin & Christophe, 2020; David Johnstone, 2018), it is planned to run the alternator. As long as human man power is available, electric power can be generated and this type of electric power generation can also be called as 'green' electric power. Left side and right-side persons are engaged to sit on the cycles in opposite directions to their faces. Clearly speaking, left side persons' and right-side persons' 'backs' are facing each other, not the faces. It may be noted that, person's seating arrangement and pedaling arrangement, both, resemble bicycle type seating and pedaling.

On either side of the alternator (Left and Right), for the 10 cycles, back tyres are removed, and their housing units are fixed on to the 6-meter power shaft at a separation distance of around 0.5 to 0.6 meter with bearings. For each cycle, freewheels are fixed on the power shaft near to the bearings. Two 25 to 30 kg flywheels are fixed on both ends of the power shafts for a smooth distribution of power.

Two heavy duty freewheels are fixed on the alternator's shaft. A heavy-duty sprocket (having same teeth as cycle's cranking sprocket teeth) is fixed on the alternator side of the right and left power shafts. Right side power shaft's sprocket is connected to the alternator's first heavy duty freewheel directly. 'Heavy duty big sprocket' in the sense, even though 'teeth number' is same, power shaft end is supposed to transfer the combined power of 10 cycles to the alternator via one sprocket and hence it can be given a heavy weight. 'Heavy duty Freewheel' in the sense, even though 'teeth number' is same, power shaft end is supposed to transfer the combined power of 10 cycles to the alternator via one Freewheel. Hence freewheel that is fixed on the alternator shaft, can be given a heavy weight. Here, heavy duty freewheel inner diameter should match with alternator shaft's outer diameter for a good mechanical coupling. This point needs a review.

A direction changing gear box (DCGB) having two sprockets on its both sides is fixed in between the alternator and the left power shaft. Left power shaft's sprocket is connected to the input sprocket of the DCGB. Output sprocket of the DCGB is connected to the second freewheel of the alternator. Thus, left and right power shafts help in rotating the alternator in clockwise direction. It may be noted that, in case of stopping of pedaling, freewheels fixed on the power shafts and freewheels fixed on the alternator shaft, help in continuous rotation of the alternator without any hiccups. Opposite directions of left side persons and right-side persons help in maintaining alternator's unique direction of rotation while changeover of persons is taking place from left group to right group or right group to left group.

See Table 1 for the crank sprocket and freewheel teeth and their teeth ratio (https://www.bikecalc.com/gear_ratios).

Let us consider a ratio of pedaling sprocket teeth to back side freewheel teeth as 3.25 where sprocket teeth number is 52 and freewheel teeth number is 16. Following the same ratio for the 10 standing bicycles, a normal average cranking speed of 30 rpm can increase the common power shaft speed to 30*3.25 = 97.5 rpm by the freewheel. By arranging the same kind of gearing ratio at the alternator side of the power shaft, it seems possible to run the alternator at 97.5*3.25=317 rpm. Clearly speaking, heavy duty big sprocket having 52 teeth is fixed on the power shaft end and heavy duty freewheel having 16 teeth is fixed on the alternator shaft.

To run the alternator at its rated speed of 300 RPM and rated power of 7 kVA, required starting torque is 3.4 Nm and rated maximum torque is around 230 Nm. It needs a review with respect to practical demonstrations. As per

the general formulae, $\left(P = \frac{2\pi NT}{60}\right)$ *and* $\left(T = \frac{30}{\pi N}\right.$, the required condition seems to be that, each person should develop a torque of 23 Nm and collectively 10 persons should develop a torque of around 230 Nm (The Science of Cycling, n.d.; P. D. Soden & B. A. Adeyefa, 1979; Bini, R. R., Hume, P. A., Croft, J., & Kilding, A. E., 2013; Quintana-Duque, J.-C., Dahmen, T. & Saupe, D., 2015). Selected low pedaling speed of 30 RPM will help in developing the required torque without any tiredness. This can be considered as a case of applying 'medium' torque by the 10 persons. As load is increasing on the alternator, further pedaling will help in increasing the torque rather than increase in RPM. It may or not be possible to get the rated 7 kVA, but it will certainly help in getting a considerable kVA and with further study, teeth ratios can be reviewed for a better torque.

Table 1. Teeth ratio of bicycle crank sprocket and Freewheel

Free wheel teeth	**Crank Sprocket number of teeth**						
	46	47	48	49	**50**	51	52
11	4.18	4.27	4.36	4.45	**4.55**	4.64	4.73
12	3.83	3.92	4.00	4.08	4.17	4.25	4.33
13	3.54	3.62	3.69	3.77	3.85	3.92	4.00
14	3.29	3.36	3.43	3.50	3.57	3.64	3.71
15	3.07	3.13	3.20	3.27	3.33	3.40	3.47
16	2.88	2.94	3.00	3.06	3.13	3.19	3.25
17	2.71	2.76	2.82	2.88	2.94	3.00	3.06
18	2.56	2.61	2.67	2.72	2.78	2.83	2.89
19	2.42	2.47	2.53	2.58	2.63	2.68	2.74
20	2.30	2.35	2.40	2.45	2.50	2.55	2.60
21	2.19	2.24	2.29	2.33	2.38	2.43	2.48

It may be noted that, a pedaling speed of 30 rpm may not a big issue for any healthy person. To reduce the strain and to keep the 10 persons' fitness, it is planned to engage left side 10 members for one hour and right side 10 members one hour alternatively. Clearly speaking, at any stage of running, only 10 persons are engaged in running the alternator at 300 rpm. Thus, in a group of 20 persons, 10 persons come under Group A (Left Group) and 10 persons come under Group B (Right Group). In 8 hours, Group A will work for 4 hours, and Group B will work for 4 hours. In this way, any person is allowed for a normal pedaling work of 4 alternative hours with an average pedaling speed of 30 rpm only and it certainly helps in getting relaxation as well as restoring energy for the next cycle. Interesting point to be noted is that, in a progressive way, labourers can be habituated to this kind of pedaling work. Thinking in this way, by engaging 60 labourers, it is planned to run one alternator round the clock in 3 a shift system.

Advantage of this system is that, on requirement, both groups (A+B), i.e., 20 persons can be allowed to run the alternator simultaneously. Following alternative hours, without tiredness, it seems possible and there is a scope for getting higher output power. Here it is very important to note that, in present electrical power and employment crisis, giving employment for 60 persons in generating 'green' electric power that is having an increasing demand is really a good thing.

7. Advanced 5 kW Electrolyzer Having External Magnetic Effects

General purpose of any electrolyser is to split water into Hydrogen and Oxygen. There exist two kinds of electrolyzers, one is Alkaline Electrolysis (AE) (Martín David, Carlos Ocampo-Martínez & Ricardo Sánchez-Peña, 2019) and second one is Polymer electrolyte membrane electrolysis or Proton exchange membrane Electrolysis (PEM) (S. Shiva Kumar & V. Himabindu, 2019). Third one is a new method and is in its experimental stage linked with external magnetic effects. Third method is having key advantages like, 19%

reduction in energy, 3 times increase in the rate of Hydrogen production and 650% increase in current density. It can be called as magneto-electrolytic hydrogen generator (MEHG) (Jayeeta Saha, Ranadeb Ball, & Chandramouli Subramaniam, 2021). As our application is completely based on the efficiency of electrolysis, it seems logical to consider the MEHG. In MEHG, a basic electrolyser cell of 0.5 nm3/h capacity can be immediately upgraded to a 1.5 nm3/h capacity by replacing the catalysts and supplying the magnetic field.

A team of researchers from IIT, Mumbai, India (C. Subramaniam, Jayeeta Saha and Ranadeb Ball) have developed an innovative route for chasing the challenges of production of hydrogen. It involves electrolysis of water in the presence of an external magnetic field. In this method, the same system that produces 1 ml of hydrogen gas requires 19% lower energy to produce 3 ml of hydrogen at the same time. This is achieved by synergistically coupling the electric and magnetic fields at the catalytic site. The simple approach also provides the capability to retrofit any existing electrolyser (that uses electricity to break water into hydrogen and oxygen) with external magnets without drastic change in the design, leading to increased energy efficiency of H2 production. It is planned to contact the research team for its possible implementation in our application.

The electro-catalytic material—cobalt-oxide nano cubes that are dispersed over hard-carbon based nano structured carbon florets, is of prime importance to achieve this effect. The interface between the carbon and cobalt oxide is key to magneto-electrocatalysis. It is advantageous as it forms a system that does not require the constant presence of the external magnetic field and is able to sustain the magnetization for prolonged time periods; the magnitude of the enhancements achieved is unparalleled, the intermittent magnetic field required is similar to what a fridge magnet can provide. This route can be directly adopted in existing electrolysers without any change in design or mode of operation and one-time exposure of magnetic field for 10 minutes is enough to achieve the high rate of hydrogen production for over 45 minutes.

See Table 2 for the approximate quantities of produced hydrogen and oxygen in electrolysis with 70% efficiency. Assuming a linear relation, data has been extrapolated with reference 50 kW of power and 1 kg of produced hydrogen in one hour. By considering the above-described magnetic electrolysis technique, there is a scope for increased quantities of hydrogen and oxygen.

8. Discussion

At a first look, people will think of this proposal as a ‘back step’ in mankind’s development. If one is willing to understand the increasing scarcity and daily increasing cost of petrol, pollution issues associated with burning of petrol and coal, tons of high-level radioactive waste produced in nuclear power plants, need of producing hydrogen, technical challenges in producing hydrogen and employment issues pertaining to poor Indian labourers—one can definitely consider our proposal positively. To fulfill our proposal, it is planned to adopt most technological solutions like modern cycle technology gearing techniques, low RPM permanent magnet alternators and highly efficient magneto-electrolytic hydrogen generators.

Table 2. Approximate quantities of produced hydrogen and oxygen in one hour with 70% efficiency in normal electrolysis

Power consumed in kW	**Hydrogen produced in grams**	**Oxygen produced in grams**
50.0	1000	8000
40.0	800	6400
32.0	640	5120
25.6	512	4096
20.5	410	3277
16.9	328	2621
13.1	262	2097
10.5	210	1678
8.4	168	1342
6.7	134	1074
5.4	**107**	**859**
4.3	86	687
3.4	69	550
2.7	55	440

2.2	44	352
1.7	35	281
1.4	28	225
1.1	23	180

Our proposal can be given a name as GHOTEE (Green Hydrogen and Oxygen for Transportation, Environment and Employment). Considering one lakh GHOTEEs across India, a minimum of 10 tons of hydrogen and 80 tons of oxygen can be produced for every hour. Connecting these one lakh GHOTEEs via internet, production norms can be reviewed time to time. Employment point of view, for one lakh GHOTEEs, a minimum of 60 lakh labourers can have a guaranteed professional job of hydrogen and oxygen production. Considering magneto-electrolytic hydrogen generators, generation tonnage of hydrogen and oxygen can be increased further and it will a have very good impact on increasing the wages of labourers. Compared to the practical problems like wind speed, wind direction and absence of solar energy during nights, our proposal is having many advantages. As sufficient man power is available, round the clock, GHOTEEs can be planned to run without any disturbance. Compared to other electrolyzers run by renewable electric power of megawatt capacity, basic drawback of proposed GHOTEE is that, its power capacity is in kilowatts.

Hydrogen production cost depends on the methods of producing hydrogen (The Global Hydrogen Review, 2021; Hydrogen production costs, 2021). In U.S.A. green hydrogen produced through electrolysis using renewable power costs around $10-15 per kg. Based renewable electric power, expected green hydrogen cost in India is around Rs. 500 per kg (Indian Oil Corporation (IOC), n.d.). It depends on the cost of electrolyzers imported from other countries. Based on Indian make electrolyzers and increased renewable electric power, cost of hydrogen may go down. As our proposal is in its budding stage, it needs a review.

9. Applications of GHOTEEs

1) Hydrogen fuel required for running Fuel cells and Internal combustion engines can be generated in large quantity with a de-central system having unlimited number of alternators spread across India.
2) Generated oxygen can be released to atmosphere and air pollution levels can be diluted to a greater extent across India.
3) Recycled waste water or sewage water can also be used for electrolysis.
4) Based on the price of hydrogen and oxygen decided by state and central governments, labourer wages or salaries can be revised time to time.
5) Multiple number of small scale units can be set up with 5 to 10 alternators and in a progressive manner, production of hydrogen by electrolysis can be increased from 5% to (30 to 40)% of total production of hydrogen.
6) To some extent, as long as Hydrogen is considered as a fuel, employment problem, hydrogen scarcity and air pollution issues can be resolved.
7) Consumption of diesel and petrol can be minimized.
8) Production of CO2 gas can be minimized by minimizing the production of Hydrogen by other methods that produce CO2.
9) As long as water is available and human labourers are available, hydrogen and oxygen can be produced with ease and comfort.
10) On demand and necessity, sea water can also be electrolyzed for generating hydrogen and oxygen at moderate cost.
11) Alternators operated by labourers can be used for charging batteries of electric vehicles on exchange basis.
12) In emergency conditions and natural calamities, alternators operated by labourers can also be used for supplying power to remote and emergency areas.
13) As there is a scope for nation-wide availability, Hydrogen storage and transportation can be decentralized.
14) Safety point of view, as generated Hydrogen pressure is on lower side, risk involved in this scheme is very less compared to Coal mining and Gold mining.
15) On successful implementation of hydrogen-based Fuel cell and IC engine vehicles, excess production of oxygen can be utilized for medical and industrial applications.
16) Considering 4 to 5 GHOTEESs installed in nearby locations, generated Hydrogen can be shifted to a

common tank arranged in a safe location and can be transferred to other locations for filling into portable pressure cylinders and liquid tanks.

17) Oxygen can be released into atmosphere for a span of 10 to 15 years to balance the environment. After that, excess Oxygen can be used for industrial, medical and space applications.

18) Now-a-days villagers and formers are permanently migrating to nearby towns and cities for feeding their stomach. By installing GHOTEEs in villages and sub-urban areas, villages can be made 'Employment Houses of India' and Oxygen passing through various villages can cover many cites making a 'Green India'.

19) Cost of Hydrogen and Oxygen can be reviewed periodically based on cost of living in villages, number of working hours, work and time study techniques, cost of electrolyser consumables, increasing price of petrol, increasing scarcity of petrol, increasing applications and benefits of Hydrogen and Oxygen, processing cost of bore water or municipality water or sewage water or river water mixing with sea or sea water.

20) In any town or city, GHOTEEs can be installed in various public places, commercial buildings, apartments and Gym centers as an emergency power source or exhibition item for demo or awareness.

21) By 2040, India can export tons of Hydrogen and Oxygen by ships.

22) By 2050, India can be called as World's Largest Green Country.

10. Conclusion

It may be noted that, every day, many farmers are moving towards cities for getting daily income, many beggars are dying with hungry, and many poor people are coming on to streets. In this context, our proposal can be a given a chance. I would like to emphasize the point that, a low-class worker can definitely lead a good life compared to beggars and other poor people having no regular income. Our proposal can certainly mould the lives of many poor people. It's very proud to say that an illiterate is producing green current, green hydrogen and green oxygen.

Russia-Ukraine war opened a very bad epoch in mankind's survival scenario. Based on many political and financial issues, at present, Sri Lanka is forced sell petrol at Rs. 250. In India, every day, petrol price is increasing and whole Indian market is getting affected badly. Considering the current world political scenario, it seems illogical to depend on other countries for oil and gas. In this context, Indian government is planning to manufacture five million tons of green hydrogen by 2030. Based on our proposal, for one lakh GHOTEEs of 5kW capacity each, roughly 87000 tons of green hydrogen can be produced per annum without any risk.

To implement our system successfully, it is planned to adopt IIT, Mumbai's magento-electrolysis method for a better productivity. Even though our proposal is 'just nothing' in front of the main stream scientific technological ideas, it can be considered as one of the best coordinating schemes for - Indian poor people struggling for getting daily wages, fulfilling Indian transportation fuel needs and saving mother earth from CO2, SO2 and NOx like harmful gases. One of the main advantages of this proposal is that- GHOTEEs no way use the electric power generated by Indian main stream power plants. It can be considered as a simple and self sustaining employment scheme. Following this proposal, India can become a best Green country in the world very soon. With further study, research and direct involvement of state and central governments, industrialists, scientists and engineers, this proposal can be implemented in a full-fledged manner from Kashmir to Kanykumari. Not only India, this project can be implemented in any country having poor people.

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