ENVIRONMENTAL SCIENCE Renewable Resources

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Opinion Journal of Environmental Science and Renewable Resources Open Access

The USA New Green Deal Will Create Over 18 Million Jobs

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Received Date: May 05, 2020, **Accepted Date:** May 28, 2020, **Published Date:** June 05, 2020.

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Opinion

The Green New Deal (GND) is a proposed package of USA legislation designed to address climate change, economic inequality, and other issues. The name is derived from the New Deal, a set of social and economic reforms and public works projects undertaken by USA President Franklin Roosevelt in response to the Great Depression of the 1930s. The GND combines Roosevelt's economic approach with contemporary proposals involving environmental programs, renewable energy, and energy efficiency, and its estimated costs run well into the trillions of dollars. In recent years, various proposals for a "Green New Deal" have arisen both in the USA and internationally.

There is currently much controversy in the USA concerning the GND, and it is featuring in the 2020 Presidential election. Democrats have been advocating it as a much needed economic and job stimulus and as a way to facilitate recovery from the current environment where job losses and unemployment are at record levels not seen since the Great Depression. On the other hand, Republicans contend that the GND would ruin the economy and destroy jobs. There is thus intense interest in the jobs impact of the GND – especially the impact on manufacturing jobs. Until now, GND jobs impacts have not been comprehensively estimated and analyzed in detail. Here I summarize this important information for the USA.

Contrary to general public perception and public policy understanding, in recent decades, green energy and environmental protection have grown rapidly to become a major sales-generating, profit-making, job-creating industry. The size and the job creating potential of the green industry is something that few people are aware of. My firm, MISI, estimates that in 2019, USA green jobs (direct plus indirect) totaled about 7.8 million. In the USA, MISI estimates that the green "industry" currently ranks above the top of the Fortune 500, and MISI estimates that in 2019 the green industry generated$640 billion in total industry sales and 7.8 million jobs.

For perspective, compared the revenues generated by other industries, this is:About equal to all supermarkets and grocery stores; greater than the construction industry; more than twice the size of the mining industry; 25% greater than Walmart; twice the size of ExxonMobil; more than 2.5 times the size of Apple; 2.75 times the size of Amazon; and four times the size of Ford. Thus, the green industry is currently a major factor in the USA economy and job market. The question here is what impact the GND would have.

The GND is not well defined and there are many different versions, and the GND cost has been estimated at anywhere from $2 trillion to $6 trillion and higher. MISI estimates that the GND would cost about cost about $2.5 trillion in expenditures (2019 dollars) and would generate more than 18.3 million jobs (direct plus indirect). Thus, here MISI is using a relatively modest version of the GND costing about $2.5 trillion that is concerned primarily with energy and environmental programs. As noted, some versions of the GND also include a variety of health, education, and other social policies. Of course, the economic and job impacts of the GND will differ depending on the size, structure, and duration of the GND specified.

The 18.3 million jobs estimated is a very large number. However, it is sobering to note that in the eight week period from early March to early April 2020, about 36.5 million Americans filed for unemployment insurance, with weekly totals above three million a week. Thus, the 18.3 million jobs is only half as many jobs as were lost in an eight week period. The official USA April 2020 unemployment rate of 14.7% actually underestimated the current degree of joblessness. The regular unemployment rate excludes so-called discouraged workers – those who are not actively looking for work. In addition, it is based on surveys conducted in second week of April, and many more workers lost their jobs in the latter half of the month. Further, many self-employed workers, gig workers, and others are not included in the 14.7% estimate. Finally, many unemployed workers have been unable to file unemployment claims: Unemployment benefits are administered by states, and many state systems are simply overwhelmed. Given the undercount of the unemployed, it is likely that the actual USA unemployment rate in May 2020 was at least 25% — a level of not seen since the Great Depression of the1930s.

MISI also estimated the jobs in the manufacturing sector that would be generated by the GND. Of the 18.3 million jobs, about 2.25 million would be "green" manufacturing jobs. Examining the GND jobs generated by industry indicates that the impact is distributed across the economy. The industries involved are not surprising given the parts they will play in the evolving transformation to a new green energy economy and subsequent economic growth. Some of the industries showing the largest jobs impacts are listed in order with the part they will play in the GND:Construction -- the industry receives an overwhelming direct stimulus from GND expenditures in addition to a positive indirect impact from improvement in overall economic growth due to energy savings; Professional, scientific, and technical services -- the industry and its employees play a large part in driving the new green energy technologies; Waste management and remediation services -- the industry will play a major role in energy efficiency and in supplying biogas; Electrical equipment, appliances, and components -- the industry will be relied upon to supply not only new electrical components and testing equipment to all the green electric energy technologies, but will also facilitate efficiencies in the smart grid from generation to final consumer use; Miscellaneous manufacturing -- manufacturing growth will require the industry's output, and it is indirectly stimulated by overall economic growth; Fabricated metal products -- the industry will be the primary supplier of parts, products, and systems for the photovoltaic, wind, concentrating solar, and other green technologies; Nonmetallic mineral products -- the industry supplies two major products that will be in high demand in several green technologies: Glass and fiberglass; Utilities -- electric and gas energy supply transitions to green technologies, and the industry

will also be stimulated by various energy efficiency initiatives; Motor vehicles, bodies and trailers, and parts -- the industry will be augmented by green energy transportation improvements that stimulate R&D and vehicle sales as the USA rolling stock turns over; Computer systems design and related services -- the industry will be stimulated by the smart grid and other green applications; Primary metals -- as supplier of metal for finished products, this industry will be indirectly impacted by increased demand from other manufacturing industries; Chemical products -- the industry will benefit from the growth of biofuels and biomass; and Other transportation equipment -- transportation energy efficiency improvements will impact this industry.

MISI also found that the GND jobs are concentrated within a number of sectors, including manufacturing and professional, information, scientific, and technical services. This is significant because the USA and numerous states are seeking to expand their high-tech industrial and manufacturing bases. Thus, not only is the relationship between the GND and jobs positive, but the types of jobs created are disproportionately scientific, professional, technical, high-skilled, manufacturing, and high-wage jobs -- the very types of jobs that all states wish to attract. These types of jobs are a prerequisite for a prosperous, middle class society able to support state and local governments with tax revenues -- which states clearly recognize. Of particular note, MISI estimates that the GND will provide a greater than proportionate assist to the manufacturing sector.

The vast majority of the millions of jobs created by the GND are standard jobs for accountants, engineers, computer analysts, clerks, factory workers, truck drivers, etc., and classic green jobs (photovoltaic engineer, ecologist, fuel cell technician, etc.) constitute only a small portion of the jobs created. In fact, most of the persons employed in the jobs created may not even realize that they owe their livelihood to the GND.

This finding is important for, even recognizing that the GND is beneficial for the economy and is creating millions of jobs; the first impression is likely that these are jobs for green energy specialists, solar installers, environmental regulators, etc. MISI determined that jobs for all occupations and skills are generated, and this should be of interest to policy-makers, organized labor, and trade and professional associations. For example, MISI estimates that the GND will create more jobs for sheet metal workers than for geoscientists; more jobs for electricians than for chemists; more jobs for computer software engineers than for hazardous material removal workers; more jobs for machinists than for forest and conservation technicians; more jobs for welders than for biochemists; more jobs for plumbers than for health and safety engineers; more jobs for security guards than for ecologists; more jobs for janitors than for natural science managers; More jobs for financial managers than for conservation scientists; more jobs for executive secretaries than for hydrogen technicians; more jobs for truck drivers than for fuel cell researchers; more jobs for human resource managers than for environmental scientists; more jobs for stock clerks than for chemists; and more jobs for management analysts than for foresters.

Unlike some industries, green industries and GND jobs are feasible targets for job creation in many states and regions. With a wide diversity of required skills and continuing research into relevant technologies, communities can develop clusters around different sectors of the industries. However, states and cities must recognize that they will be in intense competition as communities throughout the USA compete for these emerging technologies and industries with traditional university-centered research areas, including Palo Alto (Stanford University), Ann Arbor (University of Michigan), Trenton (Princeton University), Boston (MIT), Champaign-Urbana (University of Illinois), Austin (University of Texas), the Research Triangle in North Carolina, and other university-industry complexes. In addition, communities must compete for these jobs with traditional high-tech metropolitan areas like San Jose, Boston, and Washington D.C., along with metropolitan areas with rapidly expanding manufacturing, such as Grand Rapids, Michigan, Denver, Colorado, and Portland, Oregon.

However, numerous GND jobs will be created in all USA metropolitan areas. These area green economies can be categorized into four types: Service-oriented, manufacturing, public sector, and balanced. New York, through mass transit, embodies a service orientation, as does San Francisco through professional services and Las Vegas through architectural services. Many Midwestern and Southern areas, such as Louisville, Cleveland, Greenville, SC, and Little Rock – as well as San Jose in the West – have green economies that are heavily manufacturing oriented. State capitals are among those with a disproportionate share of green jobs in the public sector (e.g. Harrisburg, Sacramento, Raleigh, and Springfield). Finally, some metropolitan areas, such as Atlanta, Salt Lake City, Portland, OR, and Los Angeles, possess multi-dimensional green economies. Further, the GND will create large numbers of jobs in professional environmental services in Houston, in photovoltaics in Los Angeles, fuel cells in Boston, and wind energy in Chicago.

GND jobs will be created across a new continuum of employment, skills, responsibilities, and earnings. Notably, many of these jobs do not currently exist and do not have occupational titles defined in federal or state government occupational handbooks and employment guides. Further, many of these new jobs require different skills and education than current jobs, and training needs must be assessed to enable this rapidly growing sector of the USA economy and labor market to have a sufficient supply of trained employees. Eventually, most of these occupations will grow, the number of employees classified in the occupations will increase, and federal and state governments will add them to their employment classifications. Until then, labor market and employment analysis and forecasting will be performed using the current set of USA Labor Department occupational titles and job descriptions. In the meantime, we have developed the methodology and database discussed here.

The GND in the USA will lead to numerous jobs and vast new employment opportunities as businesses expand to serve growing markets and to meet new green energy requirements and mandates. We find that green industries will create a variety of new high-paying jobs, many of which take advantage of technical and manufacturing skills currently going unused as industry continues to undergo restructuring, and USA states, regions, and cities can recruit these emerging industries and companies.

Although many high-tech industries almost exclusively require highly educated workers with advanced degrees, as noted, the green industries possess requirements for numerous types of occupations, experience, and skills. Many occupations in these industries include jobs which require associate degrees, on-the-job training, or trade certifications, including scientists, engineers, chemists, managers, and technicians, all of which pay higher than average USA wages. Unlike some industries, green industries are a realistic target industry for job creation in most regions and states. Communities can build clusters around different segments of the industries, and the wide variety of entrance points to the green industries makes this market easier to penetrate if regions can market their strengths in high-tech, research, education, manufacturing, IT, green technologies, and energy.

Nevertheless, challenges remain, and our work has identified several areas requiring further research. First, a more rigorous and generally accepted definition of what constitutes a "green job" is required. GND advocates and green energy promoters tend to identify the more glamorous types of jobs, such as ecologist, renewable energy engineer, wildlife biologist, fuel cell researcher, solar energy installer, etc., but the overwhelming majority of green jobs are for standard occupations, skills, and professions. Nevertheless, the numbers and types of green jobs – both in general and in specific industries and firms – require additional research.

Second, the empirical work reported here needs to be expanded to the state and regional level. While we have estimated GND jobs at the national level, much more detailed assessment of green jobs at the sub-national level is required. Such an assessment would also look in detail below the state level to specific geographic regions and industries and conduct in-depth analyses of specific green firms. It really does come down to "jobs, jobs, jobs!" It is impossible to over-emphasize the importance of jobs impacts – especially in the current environment of record unemployment. Regional disaggregation is required of the GND jobs created, especially at the state level of detail, and below. There is great Congressional and state and local government decision-maker interest in these data and there will be a large and influential audience for the estimates. The implications of determining the benefits to specific states and regions are obvious, for the debate at the state and regional level inevitably revolves around jobs.

Third, the number of GND jobs created is important, but it is also important to disaggregate the employment generated into industries, occupations, and skills. From previous MISI work it is clear that green jobs generated are disproportionately concentrated in fields related to the construction, energy, utilities, technology, industrial, and related sectors, reflecting the requirements of the GND programs and their supporting industries. The green jobs created are across a wide spectrum in many industries and in professional and skilled occupations. However, it is also true that numerous jobs are also being created at all skill levels. Accordingly, the importance for jobs in some occupations is much greater than in others, and further research is required to estimate these occupation/skill impacts more definitively. The detailed indirect green jobs impacts by sector, industry, and occupation/skills, as well as new and emerging occupations, need to be estimated. MISI research indicates that many of the jobs generated are in industries and occupations not necessarily linked to green industries and are, instead, created throughout the interindustry supply chain and in supporting activities. While some illustrative examples of these have been reported here, this issue requires rigorous research.

Fourth, it would be useful to have international perspective. We found that in the USA, the GND would create about 18.3 million jobs. Using generally consistent concepts and definitions, it would be useful to determine how these estimates compare to estimates of the jobs that would be created by GND-type of initiatives in other nations. International comparative analyses of detailed results at the sectoral, industrial, and occupational level are especially germane.

Finally, forecasts of GND jobs have to be further refined to estimate the number of jobs openings that will occur, the types of jobs created, when they will occur, and where they will be located. Training for new skills will be needed across a wide spectrum of industries. Some changes in skills are relatively well defined, but many likely changes remain difficult to forecast since green technologies are still evolving. Many job tasks currently remain unknown, and thus identification of training needs requires interactive research combined with job definition. Science and engineering education needs to prepare students for green energy jobs, and university and vocational programs need to be assessed to understand where opportunities lie and what additional curricula may be needed. Community colleges, technical schools, colleges, and universities need to be evaluated to determine how well they are preparing the workforce for the emerging green economy and labor market.

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Received Date: May 05, 2020, **Accepted Date:** May 28, 2020, **Published Date:** June 05, 2020.

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Citation: Bezdek RH (2020) The USA New Green Deal Will Create Over 18 Million Jobs. J Envir Sci Renew Res 2(1): 107.

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