Tempus Resource
by ProSymmetry

Creating Strategic Flexibility for the Top 3 Resource Management Challenges in Renewable Energy

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People: the renewable energy sector's key strategic resource

Across the renewable energy sector, including solar, wind, biomass, hydroelectric, and geothermal, strategic flexibility means the availability of "strategic options that are created through the combined effects of an organization's coordination flexibility in acquiring and using flexible [human] resources."[1] In renewable energy (RE), multiple factors affect employee workforce and talent numbers, and thus impact businesses' capacity for strategic flexibility. These factors include market shifts, policy and legislation changes, natural resource scarcity, and climate change.

> ***"People, not projects, are the foundation for addressing an increasingly extreme climate."[2]***

Managing people resources in RE is already a complicated affair, with a single project consisting of experts in engineering, system design, project management, land management, electrical, installation, and operation, to name just a few. Compounding this complexity are external shifts that affect people resource numbers, including changes in federal and state funding, education, legislative mandates, public opinion, and corporate commitments to carbon neutrality.

All these conditions make it ever more pressing for RE developers to strategically manage and effectively deploy their people in order to maintain readiness to adapt to change. This readiness is the key to businesses' ability to "pursue alternative courses of action in responding to changing environmental conditions."[3]

According to a Brookings Institute report on clean energy jobs, recovery after COVID-19 and combating climate change for good will depend largely on the people working in the industry. The following white paper will examine three major challenges to managing people resources in RE and present the ways in which optimized human resource management strategies and tools can help RE businesses maintain their capacity for strategic flexibility amid ongoing industry, political, and environmental changes.

Prioritizing a dynamic sourcing and assignment capability

In 2019, approximately 11.5 million people worldwide were employed in RE jobs,[4] with about 3.4 million of them in the U.S.[5] Prior to COVID-19, renewable energy "was among the U.S. economy's biggest and fastest-growing employment sectors, growing 10.4% since 2015."[6] Much of this RE job growth has been attributed to dropping technology costs, higher demand for renewable energy and efficiency technology, and supportive policies and investments.[7]

However, according to a recent report from the Clean Power Professionals Group, RE lost over 27,000 jobs in May 2020 alone, making the total job loss number from the second quarter of 2020 over 600,000. Moreover, the fluctuations in people resources won't end with the recovery from COVID-19, even when disruptions in supply of equipment, components, and raw materials begin to ease. If one ambitious investment package is adopted, the International Renewable Energy Association predicts that the energy sector as a whole will employ 100 million workers by 2050, a ten-fold jump from 2019.[8]

Further complicating the workforce landscape, new RE jobs that are created will "not necessarily [be] created in the same locations—communities, regions, or countries—where losses occur."[9]

Other major factors affecting the stability of people resources include:

- General labor shortages[10]
- Retirement[11]
- Older plant closures[12]
- Utility mergers and acquisitions[13]

Demand Planning and Forecasting

In the face of this kind of flux, RE businesses need strategic methods for staffing projects across their portfolio and optimizing their resources. It can be easy to stretch under-resourced organizations too thin, so leaders need to take care to avoid overallocation, burnout, and knowledge loss.

Accurate and up-to-date data on your resources is essential to responding quickly and effectively to changes. When you know who you have and what they're working on, substitutions and reallocations can be made far less painfully.

And new projects still need to move forward. For better accuracy, early-stage forecasting with generic, unnamed resources allows RE projects to be planned in detail and with accuracy, then later filled with actual people once they are onboard. This planning capability is especially important with the increasing reliance on contract workers and employees needing to relocate for specific project demands.

Scenario Planning

RE businesses can also use scenario planning to gain a portfolio-level view of the effects people shortages or changes will have. Using scenarios to see the real-time effects of suddenly losing, gaining, or shifting resources gives you crucial visibility and enhances decision-making. The best tools will show you impacts to individual projects and the entire portfolio.

Both demand forecasting and scenario planning are designed to give you as much visibility, foresight, control, and planning power as possible, during these especially turbulent times and amid normal workforce changes.

Want to find the right people? Focus on skills, not job titles

Another major challenge in managing people resources is the rapid changes in technology and skills requirements in RE jobs, which can range from renewable energy production, transmission, distribution, installation, construction, operation, and maintenance, plus environmental managers and engineers.[14] In RE, entirely "new occupations emerge such as solar photovoltaic installer or biomass plant technician."[15]

Not only are RE businesses balancing these various roles and accompanying skills when managing their resources, but the skills themselves are constantly changing, largely due to technology developments and advances. Utilities must be innovative to keep up with new demands like smart grids with security, which require extensive IT and cybersecurity training.[16]

Further skills changes will come from "developments in AI and smart automation," which will "increase the share of work task performance taken on by machines."[17] Displacing manual work will push more training and reskilling in advanced and creative human work.

Skills and Competencies Matrix

In any industry, but most especially one undergoing reskilling on such a massive scale, individual skills and competencies need to be carefully tracked. Knowing who is capable in what areas, and keeping that information consistently up to date, will ensure placement in the right roles and increase overall portfolio success.

Job titles alone won't always reveal specific capabilities, knowledge sets, previous experience, certifications, or comprehensive skillsets. Being able to track, search, and assign people resources based on their mix of skills and the complementary skills of their coworkers will ensure coverage of critical knowledge areas.

Additionally, a skills and competencies matrix will let RE businesses better plan their resource allocation. If used alongside demand planning, a skills and competencies matrix can allow projects to be created using generic resources with specific skill requirements attached. Businesses can build ideal teams suited for maximum productivity.

New legislation will drive an increase in hiring

In contrast to the many causes of workforce contractions, new and upcoming legislation is set to expand the RE labor force by substantial numbers. With plans for the U.S. to rejoin the Paris Accord, government incentives and public desire for corporate carbon offsets or carbon neutrality, and ambitious state and municipality ordinances for sourcing renewable energy, new RE jobs will be needed to fulfill all our various commitments.

The website database for the National Conference of State Legislatures reveals that there are currently over 4,500 state bills under consideration or already adopted regarding climate action, renewable energy, green jobs, utility regulation, and energy finance.[18]

Recent state RE legislation includes Virginia's Clean Economy Act of 2020, mandating solar and wind development and capacity, plus requiring utilities to be carbon free by 2045.[19] Another is New York state's Climate & Communities Protection Act,[20] which passed in 2019, and sets targets of 9,000 MW of Offshore Wind by 2035, 3,000 MW of Energy Storage by 2030, and 6,000 MW of Solar by 2025.

These and many other major RE development mandates will mean an influx of workers at all skill levels and across geographic locations.

> ***"Federal and state regulatory mandates continue to influence energy companies' priorities and the workforce plans that support them."***[21]

One of the most ambitious strategies is from the International Renewable Energy Agency, which proposes a funding package that would "more than double the annual investment in energy-transition-related technologies . . . and create 5.5 million more jobs in transition-related technologies."[22]

Optimized Project Scheduling

Complex RE projects need resource forecasting and planning tools that are secure, flexible, and detailed. This especially holds true when there is an anticipated increase in people resources, which may impact team sizes, composition, delivery dates, and more.

Connecting projects into a portfolio-level network by timelines, dependencies, teams, and capacities will be key for managing complexity across departments or even organizations who must work together to meet state and federal targets.

Collaborative efforts lead to innovation

Market, labor, and legislative fluctuations will certainly continue to expand or contract the available people resources in the renewable energy sector. In order to meet consumer and corporate demand, legal mandates, and climate action initiatives, RE projects will have to find ways to optimize the resources on hand, forecast shifts, utilize scenarios, and keep up with tracking ever changing skills and competencies.

> *"The innovation process rarely starts with a lone inventor experiencing a flash of insight, but more often germinates from collaborations among teams of researchers or among designers, users, manufacturers, and others. Whatever the source, the initial insight is just the first step."*[23]

As in every sector, it's people who get the work done—together. Continuing to innovate through change, growth, and new demands will necessitate RE businesses having accurate, up-to-date, and flexible resource management, ensuring that essential solar, wind, hydroelectric, and biomass projects can be planned and executed for the benefit of workers, organizations, and our planet.

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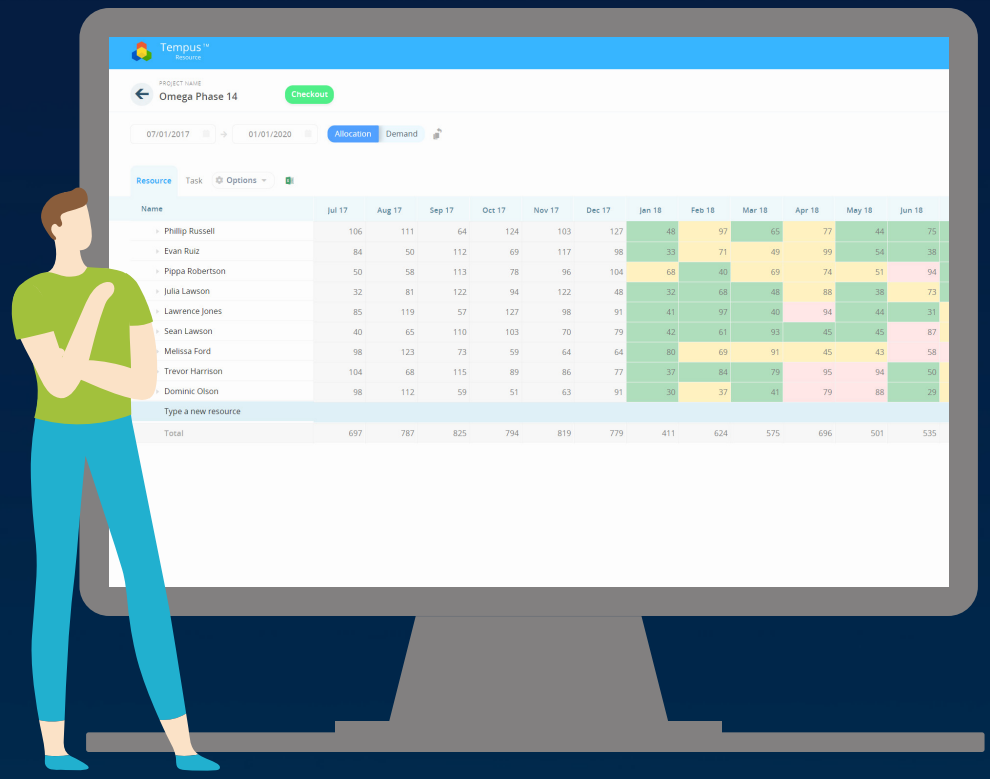
How Tempus Resource Solves the Resource Management Challenges of Renewable Energy



Resource Forecasting Tools and Techniques

Tempus Resource provides more resource forecasting tools and techniques than any other enterprise resource management software system on the market today. Use Tempus to support a comprehensive demand forecasting system for your renewable energy initiatives and support a comprehensive strategy execution model for the era of digital transformation.

Tempus Resource's forecasting tools include single project planning grids and bulk planning grids. Plan by hours, FTE, FTE%, cost and/or person-days. Plan at the quarter, month, week or day level. Instantly visualize, cross portfolio, utilization rate and apply custom heatmap color coding. Perform resource planning and forecasting at the project level or at the task level. Plan with named resources and/or generic placeholder resources. Utilize security to limit access and levegage resource planning and forecasting workflows to incorporate resource manager decisions in resource allocation.

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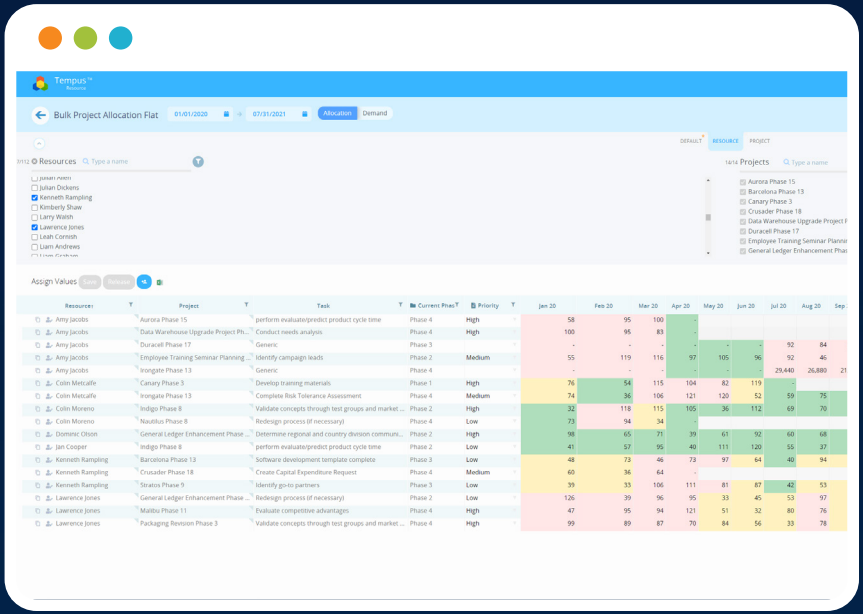
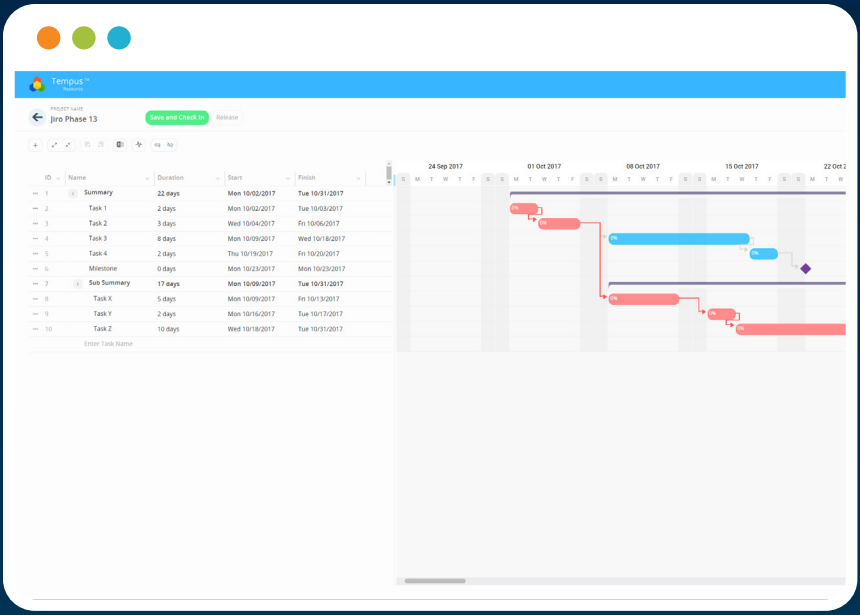
Over time, transition to more detailed plans with task-level break-out, critical path analysis, and work breakdown structure.





Access powerful purpose built report writers for supply demand analysis and business intelligence with dashboarding and drag-and-drop report writers. Quickly and easily identify bottlenecks and utilization percentage across your renewable energy project portfolio.

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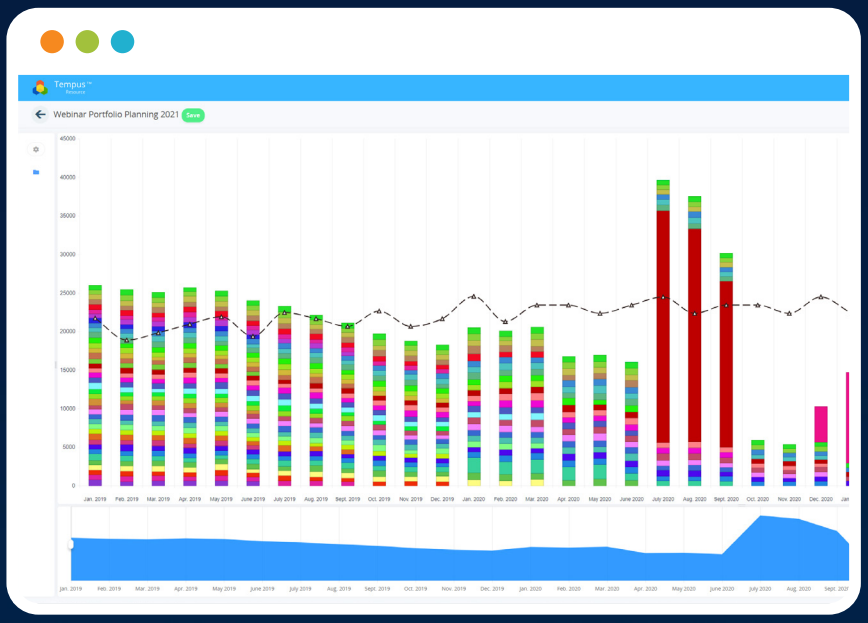
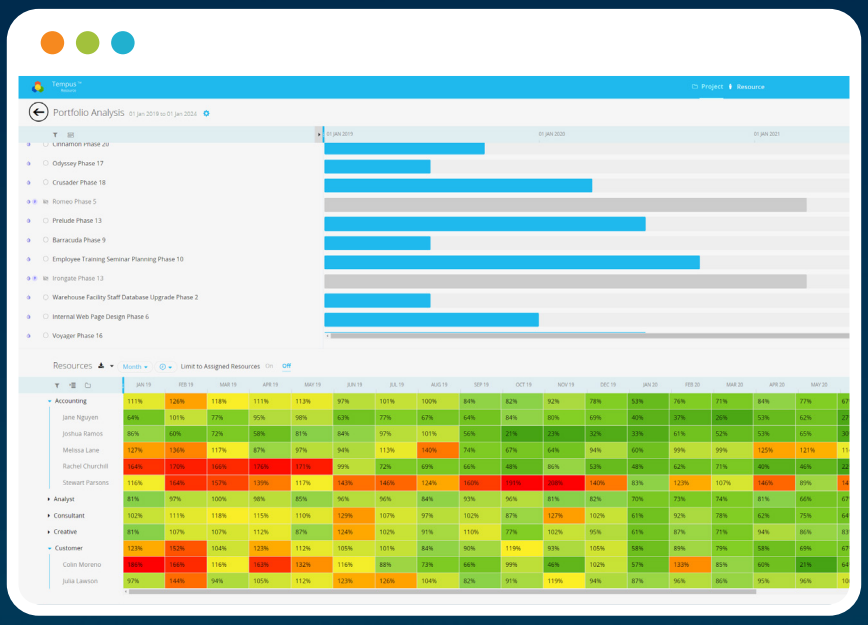


Strategic Planning and Scenario Planning

Unify all planning data into the industry's leading what-if analysis and scenario planning software engine. See the effects of changing project timing and durations to improve your strategic thinking. Simulate changes to project dates, compressions, expansions, assignments, and resource efficiencies. Instantly see the effects in work, FTE, utilization percentage, and costs. Configurable heatmaps, shale charts, mountain charts, coolmaps and delta reports illuminate bottlenecks and help identify competency and skill-related challenges to your renewable energy portfolio. Apply custom calculations to employee utilization and apply color coding.



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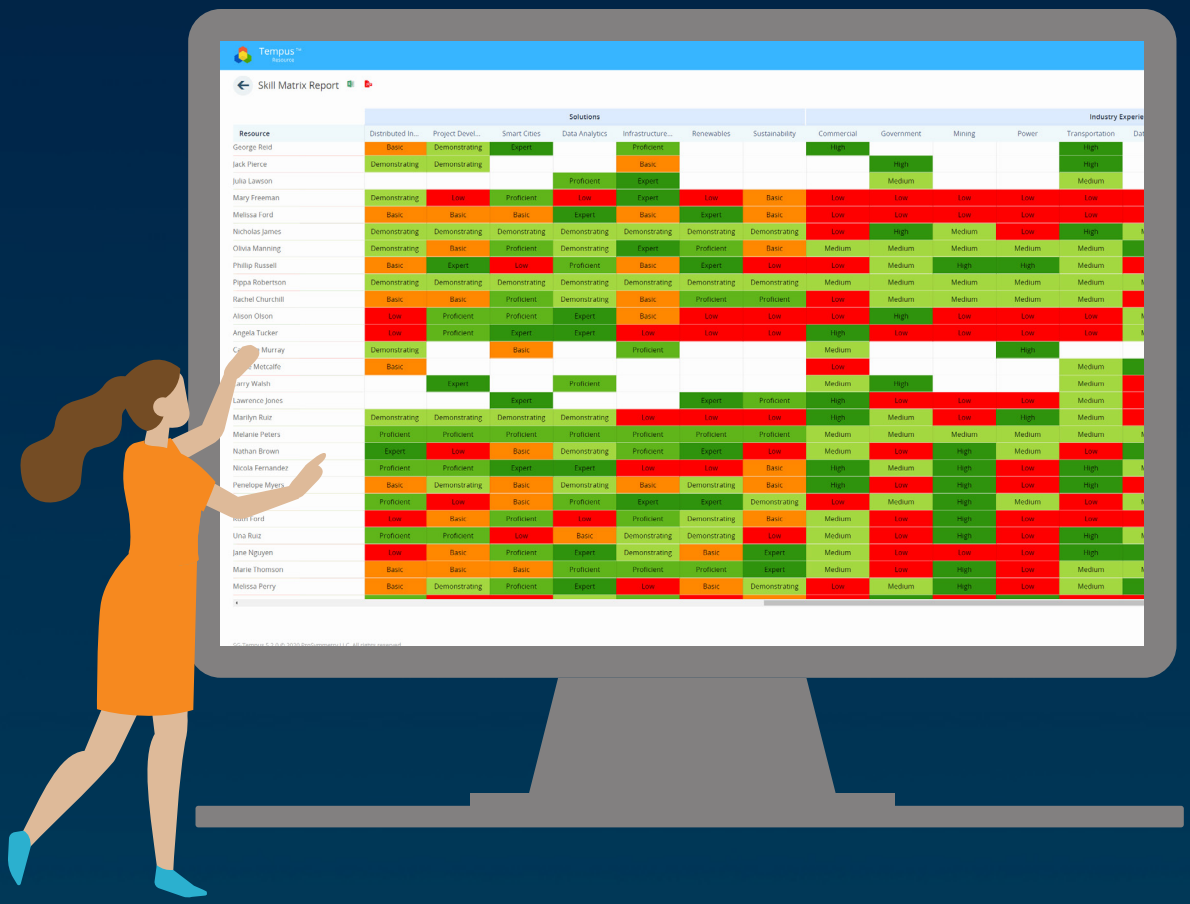
Plan and optimize your portfolio of projects with portfolio planning tools. Integrate your project portfolio management process with your scenario planning techniques to fully optimize your strategic thinking and planning. Use force-in and force-out logic and configurable attributes to make selection decisions to maximize value across your renewable energy portfolio.

Competency Management & Skill Management

Use Tempus as your competency management system of record. Organize and manage all competencies into centrally governed skill matrices. Allow end users to manage their own skills or provide control to managers who can set and maintain skill values for their teams. Utilize various competency management measures such as value ranges, Boolean, high-medium-low, and advanced categories with competency management system best practices. Craft unique skill matrices for organizational groups, teams, or business units while maintaining one central competency management catalog to manage your resource portfolio in order to best address the demand of your renewal energy strategic planning and execution.



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More Information

Tempus Resource allows users to:

- Run powerful "what-if?" scenarios in real time
- Quickly gauge over and under-allocations of resources
- Create fast, intuitive infographic data
- View the full project portfolio in one place
- Work stand-alone or synchronize with PPM/HCM/HRIS systems

For more information about Tempus Resource please contact:

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About Tempus Resource

Tempus Resource by ProSymmetry is the only resource management solution for mid-size to large enterprises that combines innovative 'what-if?' scenario modeling with a user-friendly, Excel-like interface for data input. Purpose-built to help resource management and planning professionals balance available resources, critical projects and future growth, Tempus Resource offers integrations with many PPM solutions and internal systems.

To learn more about Tempus Resource, visit **prosymmetry.com**

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