

## EXECUTIVE SUMMARY

# NEW ECONOMY TARGET INDUSTRY ANALYSIS



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Prepared for:  
Tri-City Development Council

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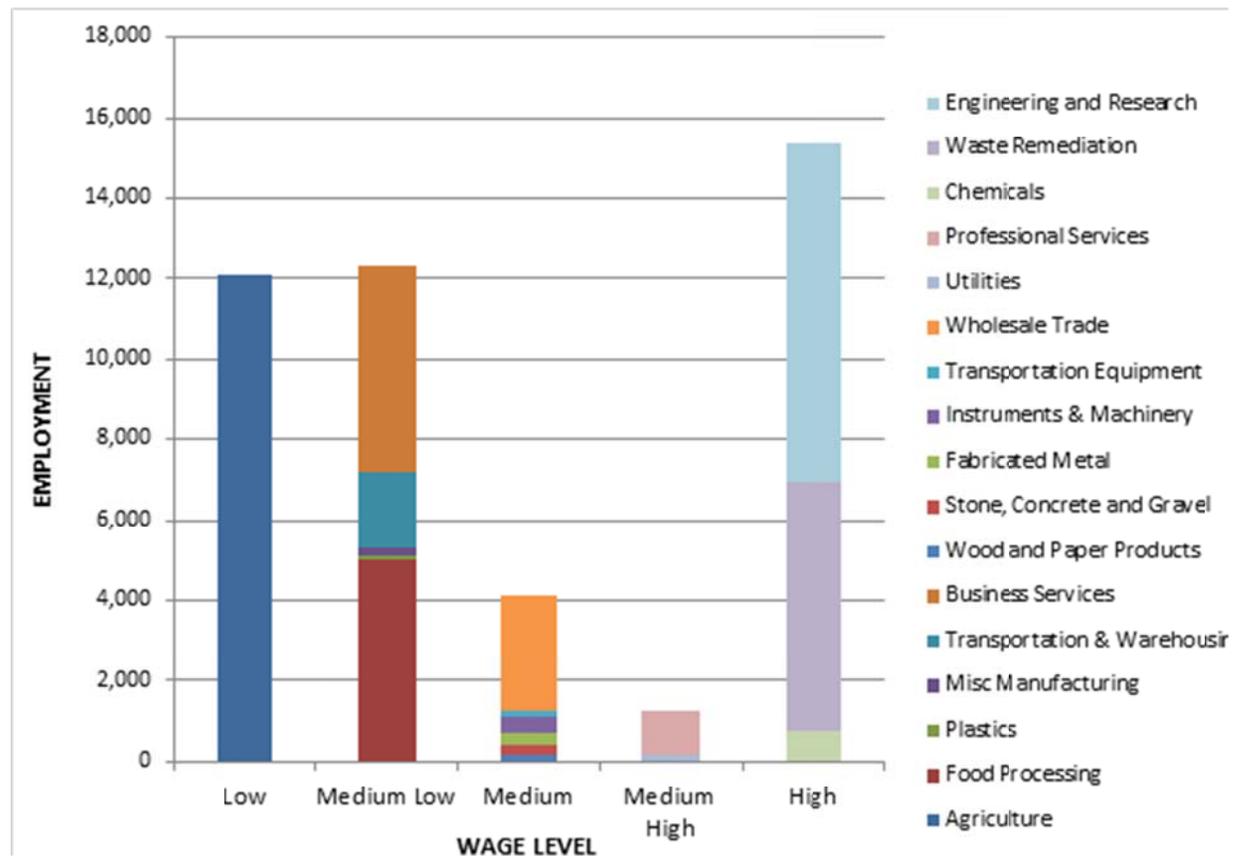
## INTRODUCTION

The Tri-Cities region has enjoyed a relatively strong economy for several decades. It's location at the confluence of the Yakima River into the Columbia Basin has contributed to Tri-Cities magnet for value-added agriculture and food processing. The remote siting for the Department of Energy at Hanford has spurred the region's economy since World War II and continues to impact the region with numerous highly-skilled occupations. Recent investments in wind energy generation along the Columbia River has expanded Tri-Cities' presence in renewable energy. The growth of the wine industry not only provides for tourism development, it creates desirable livability features for talent attraction.

TRIDEC charged the TadZo Team to identify ways to leverage the region's assets to position for industries that will take the regional economy to a higher level of success. This study focuses on basic industries – those industries that bring new wealth into the local economy in the form of investment, jobs, payroll and local purchasing. Basic industries contribute the greatest economic impact to an economy.

A substantial dichotomy exists in the region between agriculture at the low end to engineering and research; waste remediation; and chemicals at the high end. Figure 1 (right) illustrates the bimodal nature of industry employment in the region. The significant gap in medium and medium high wage levels should serve as a call to action for strategic business recruitment. The recommended target industries strive to close this gap.

FIGURE 1 - REGIONAL WAGE DISTRIBUTION



Department of Energy-related employment will continue to be a significant part of the Tri-Cities economy over the next forty to fifty years. However, it is important to further diversify the regional economy for the long-term to stabilize against the tumultuous federal funding cycle.

Keep in mind that targeting specific industries is not done at the exclusion of other business recruitment opportunities. If leads come to the region outside of targets, TRIDEC and partner economic development professionals should work those projects aggressively. This research identifies industries that align to regional capabilities and provide an opportunity to diversify the regional economy. Target industries enable a focus for proactive marketing strategies and smart resource allocation.

This document highlights the research of four related reports, focusing on Tri-Cities competitiveness for winning jobs and investment; screening “best-fit” industry targets; competitor intelligence; and recommendations for actions to position competitively for target industries.

## TRI-CITIES COMPETITIVENESS REPORT CARD

The Tri-Cities Competitiveness Report Card — is to document regional capabilities, limitations, unique assets, and competitive advantages in relation to fundamental site selection factors. Since New Economy Industries have higher demands compared to traditional industries, specific research of New Economy Indicators will investigate Tri-Cities’ human capital, local talent generators, and innovation capacity measures. This assessment identifies Tri-Cities’ world-class assets as well as any limitations that would screen out potential targets.

### FUNDAMENTAL COMPETITIVENESS FACTORS

Fundamental competitiveness factors are most commonly evaluated through the site selection process. Based on company strategy and needs, the factors are assigned different levels of priority for a particular site selection project. However, all fundamental factors usually need to be strong to win the location project.

The fundamental competitiveness factors are rated on an “A” to F” scale as defined below:

- A = Factor is a world-class competitive advantage.
- B = Factor could be competitive advantage but missing key elements.
- C = Resources can be found in many communities.
- D = Fundamental assets necessary to attract investment are missing for this factor.
- F = Community does not show-up when discussing this factor. Disadvantage so great it would be a deal killer.

The Tri-Cities Competitiveness Report Card is presented in Table 1 (right).

### NEW ECONOMY INDICATORS

- **Human Capital** - In order to understand the types of new economy industries that may be most beneficial to the local community, it is important to gauge the level of intellectual infrastructure present in the Tri-Cities area that support innovation and entrepreneurial activity. The majority of jobs created in this country over the next ten years will require some post-high school education. Regions that have a high capacity for growth and the ability to respond to changing economic conditions are the locations that are able to attract and retain knowledge workers.

**TABLE 1 - TRI-CITIES COMPETITIVENESS REPORT CARD**

FACTOR	RATING
Global Location	C
Transportation	
▪ Highways	A
▪ Rail	B
▪ Air	B+
▪ Ports	C
▪ Intermodal	D
Real Estate	
▪ Available sites	A
▪ Available industrial buildings	C
▪ Available office buildings	B
Infrastructure & Utilities	A-
Human Capital	
▪ Labor pool	B
▪ Costs and productivity	B
▪ Training Resources	B
Business Resources	
▪ Innovation	B
▪ Entrepreneurship	C
▪ Financing	C
Business Climate	B
Mitigated Risks	C
Sustainability	D

- **Educational Attainment** - Tri-Cities is somewhat below state and national averages with only 24 percent of the population with a bachelor's degree and 9 percent with a graduate degree. Tri-Cities ranks above the national average in terms of the share of the population with an Associate's degree.
- **Non-farm Employment by Occupation** - Tri-Cities surpasses national and state averages for occupations in architecture and engineering; life, physical, and social sciences; construction, maintenance and repair; and production, transportation, and material moving. The Tri-Cities has an above average share of workers in STEM fields like engineering and life and physical sciences, but a below average share of workers in management and professional services
- **Occupational Location Quotient** - An occupational location quotient (OLQ) shows the occupation's share of an area's employment relative to total national employment. Clusters of Nuclear Generation/Remediation/Research and Agriculture/Food Processing dominate with exceptionally high occupational location quotients. Several specific occupations within these two clusters exceed ten to twenty times the national share of employment for these occupations. Manufacturing skills beyond food processing have no significant presence in the region.
- **Ability to Produce Talent** - Global competition for talent is the leading issue for employers. It is important for communities to be able to locally produce talent.
  - **Secondary Education Quality** - Tri-Cities' graduation rates fall behind the state and nation, yet SAT scores generally exceed both the state and nation. The region also suffers from larger classrooms than the nation and slightly larger than state-wide figures.
  - **Stem Degrees Awarded by Institution** - Leading STEM programs for WSU Tri-Cities include: agricultural sciences, with specific emphasis on viticulture and enology, computer science, engineering, nursing and sciences. An undergraduate bio engineering degree is also in development.
- **Innovation Capacity** - This data provides indication of the existing capacity to generate innovative products and processes, or the ability to augment local innovative capacity by attracting new firms and new talent.
  - **University R & D Expenditures** - Data shown for Tri-Cities is actually representative of all of WSU because research funding cannot be separated by campus. However, the distribution of funding is significantly different than for the state as a whole. WSU has significantly less federally funded research than the state or national average and significantly more institutionally funded research. WSU also has a much larger than average share of state funded research. This is important in terms of the local support for R&D; however increasing industry-financed research is also important in terms of bridging the gap to commercialization.
  - **Patents** - Although the region has a sizeable level of patent activity for a small urban area, it is still slightly below the national average.
  - **Manufacturing Value-Add** – The Tri-Cities area ranks about 13 percent below the national average and 21 percent below the state average.

- **Technology Industry Employment** - Within the Tri-Cities, emerging technology companies represent 6.9 percent of the region's employment, which is more than twice as much as the state or national average. However, the region is below average in terms of employment in high tech industries, which represent less than 1 percent of the region's employment versus 5.9 percent at the state level. Not surprising, the Tri-Cities' share of workers in science and engineering occupations is slightly above the state as a whole with knowledge-based workers encompassing 10.5 percent of the resident workforce versus 9.4 percent of the state's workforce.
- **New Business Formation** - About 10 percent of the businesses in the Tri-Cities have been there less than one year. This includes both newly formed businesses as well as existing businesses that are simply new to the area. This level of new business formation and expansion is comparable to the state and national average.

## TARGET INDUSTRIES RECOMMENDATIONS

The purpose of this research is to present methodology, data and rationale related to the identification of recommended target industries for the Tri-Cities region. Industry intelligence for target industries is also provided to enhance understanding of industry needs.

## METHODOLOGY

The process to determine target industries for the Tri-Cities region involves two steps:

- 1. Industry Trends Analysis:** This step includes research of industry growth at the 6-digit NAICS<sup>1</sup> level for the region (Benton and Franklin Counties) as well as a larger Washington/Oregon region. The most current data is utilized in this analysis. The last year of the data represented is 2012.
- 2. Regional Fit Analysis:** Findings from the Tri-Cities Competitiveness Report Card will be used to identify industries as to what the Tri-Cities region can accommodate successfully. Both limitations and unique assets will be considered in the screening analysis.

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<sup>1</sup> NAICS stands for North American Industry Classification System and is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. NAICS replaced the Standard Industrial Classification (SIC) in 1997.

## RECOMMENDED TARGETS

All of the previous analysis distills down to the recommendation of targets for the Tri-Cities Region. In this recommendation, our perspective takes into account the entire regional economy and a comprehensive value chain versus solely “new economy” industry sectors, which are already disproportionately high in the region with an abundance of highly-skilled workers. The recommended targets build on the region’s competitive assets and experience in agriculture along with world-class research capabilities. In essence, the recommended targets focus on each ends of the bi-modal labor market, working toward the middle to close the wage distribution gap and strengthen the regional economy against market fluctuations through diversification.

Table 2 (right) presents the proposed industry clusters and corresponding NAICS for target subsectors.

The targets represent the best opportunities for Tri-Cities within the next five years, for the most part. Some of the targets may require the region to work on additional asset development and positioning in the market as the industry evolves into active site selection mode. These industries are noted for longer-term prospecting.

**TABLE 2 - TRI-CITIES TARGET INDUSTRIES**

NAICS	DESCRIPTION
<b>Energy: Nuclear SMR, biofuels manufacturing, solar testing facilities, smart grid</b>	
221100	Energy technology
221113	Nuclear electric power generation
221119	Other electric power generation
541712	Physical and engineering research
325193	Biofuel manufacturing
541712	Solar testing
3345	Smart meters
3359	Energy storage
3344	Sensing & measuring
3342	Integrated communications
<b>Logistics</b>	
493120	Refrigerated warehousing & storage
488510	Freight transportation arrangement
488991	Packing & crating
488999	All other support activities for transp.
424800	Wholesale beer/wine
424400	Wholesale produce
424480	Fresh fruit and vegetable merchant wholesalers
<b>Food Processing</b>	
311411	Frozen fruits & vegetables
311900	Frozen specialty foods
311423	Dried & dehydrated foods
311911	Perishable prepared foods
<b>Machinery Manufacturing</b>	
333294	Food processing machinery
<b>Carbon Fiber Manufacturing</b>	
325222	Noncellulosic organic fiber mfg
<b>Training</b>	
611420	Computer training
611430	Management training

A brief overview of rationale for recommended targets is provided below:

NEAR-TERM TARGETS	RATIONALE FOR RECOMMENDATION
<p><b>Energy:</b></p> <ul style="list-style-type: none"> <li>▪ Small modular nuclear reactors</li> </ul>	<p>Small modular nuclear reactors (SMR) are viewed as one component of a diverse platform of energy production technologies in our future. The concept is “plug and operate” small reactors (perhaps generating 40 megawatts each) are shipped directly to sites on tractor-trailers for immediate installation and operation. Spent reactors are returned for refueling and maintenance. The SMR supply chain is large, complex, and spans the globe. While competition in this space is intense, there is a legitimate argument that says the Tri-Cities can find a niche in this potentially large energy sector.</p>
<p><b>Energy:</b></p> <ul style="list-style-type: none"> <li>▪ Smart grid</li> </ul>	<p>America’s energy future will see the deployment of Smart Grid technologies that improve the ways we produce, distribute and use electricity. Smart Grids are built on systems integration including software and hardware. Tri-Cities has the opportunity to leverage local assets that are already aligned with next generation smart grid industrial sectors.</p>
<p><b>Logistics:</b></p> <ul style="list-style-type: none"> <li>▪ Agriculture</li> <li>▪ Processed foods</li> <li>▪ Wine</li> <li>▪ Craft beer</li> </ul>	<p>The Railex operation in Walla Walla County – a unique asset in the region - along with abundant land for development, offer the Tri-Cities an opportunity to build a stronger industrial base with strategic logistics industry growth. Although logistics is not a “new economy” industry, it is important at this time in the market to influence how the logistics sector evolves in the region so Tri-Cities can capture longer-term industrial growth. By targeting wholesalers and distribution companies for agriculture, wineries and even breweries to utilize Railex and other regional transportation services, Tri-Cities will be well-situated to attract high-value food processing, and more wineries and breweries because of this infrastructure.</p>
<p><b>Food Processing:</b></p> <ul style="list-style-type: none"> <li>▪ Frozen fruit and vegetable manufacturing</li> <li>▪ Frozen specialty food manufacturing</li> <li>▪ Dried and dehydrated food manufacturing</li> <li>▪ Perishable prepared food manufacturing</li> </ul>	<p>The Columbia Basin is one of the leading agriculture regions not only in Washington State but the entire Pacific Northwest. Fresh produce and potato processing currently dominate this cluster. There is also opportunity for expanded production supported by abundant irrigation water and land resources in the region.</p> <p>Best fit targets focus on higher value-add food production, thus advancing from processing only fresh crops to converting primary-processed products through secondary food processing. For example, frozen meals and other specialty frozen foods. Piggy-backing on logistics industry growth, perishable specialty foods will have distribution channels for just-in-time delivery.</p>
<p><b>Machinery Manufacturing:</b></p> <ul style="list-style-type: none"> <li>▪ Food processing equipment</li> <li>▪ Winery equipment</li> </ul>	<p>To enhance food processing and local winery growth, manufacturers of equipment used in food processing operations and wineries are a natural fit for TRIDEC to pursue with for business recruitment.</p>
<p><b>Training:</b></p> <ul style="list-style-type: none"> <li>▪ Security</li> <li>▪ Hazardous material handling</li> </ul>	<p>Tri-Cities region has a long tradition for government and corporate engagement in hazardous waste handling, storage and transport, in environmental remediation, in the security of highly sensitive facilities, and in related complex management environments. However, the world is catching-up with Hanford and Tri-Cities on these challenges. The combination of a training-rich tradition, local experts across a broad spectrum of needs, and unprecedented training grounds afforded by Hanford and surrounding lands, create a platform on which world-class training programs could be built.</p>

LONGER-TERM TARGETS	RATIONALE FOR RECOMMENDATION
<b>Energy:</b> <ul style="list-style-type: none"> <li>▪ Biofuel</li> </ul>	The future of biofuels is one of the key strategies for reducing dependence on foreign oil. Communities that can demonstrate a track record for innovation regarding highly-efficient processes and new biomass sources will be successful in driving the industry. The challenge will be for Tri-Cities to capture these innovations, and recruit complementary innovations, to the region for full-scale production of biofuels or related manufacturing equipment.
<b>Energy:</b> <ul style="list-style-type: none"> <li>▪ Solar testing</li> </ul>	The major reasoning for including solar testing facilities, and for that matter, solar farms, is the unique megasite located on the Hanford properties. Bonneville Power's endorsement of this site as fitting for major energy load projects supports opportunities for generating solar power.
<b>Carbon Fiber Manufacturing</b>	Market opportunities are increasingly growing for carbon fiber manufacturing because many industries are demanding lighter products but need to keep the cost of materials down. This will require new manufacturing processes to keep costs down and innovation and quality high in order to be competitive for larger market opportunities.

## INDUSTRY INTELLIGENCE

In order to effectively market and speak with business prospects about their industry, it is important to gain insights on each target industry cluster. Different issues and needs drive site location and expansion decisions for each industry. In-depth industry intelligence was researched and provided to TRIDEC including:

- **Industry Importance Factors** – priority factors for each industries site location needs.
- **Key Industry Occupations** – top occupations to drive training and workforce development programs for each target industry.
- **Industry Pro Formas** – a typical company's operation for each target industry, including employment, facility square feet, building type, capital investment and average wages
- **Source Geographies** – U.S. and international areas with high concentrations of target industry companies that could be target areas for marketing and prospecting.
- **Industry Profiles** – Comprehensive overview of industry, current trends, challenges, forecasts and industry resources.

## COMPETITOR INTELLIGENCE

This research identified and investigated how competitors are positioning for TRIDEC’s target industries as well as what services, programs, research initiatives and marketing that these competitors utilize to become a distinctive “location of choice” for the respective industry. The findings may provide some insights beneficial in TRIDEC’s design of programs and initiatives for attracting and growing industry targets.

The research may also be surprising as to the lack of competitive marketing or initiatives to strengthen a competitor’s business case for the specific industry. In several areas, the industry appears to have grown organically overtime, providing an image of strength for the region. We unexpectedly discovered a lack of intentional programming to promote the industry and enhance competitiveness in these cases. These findings will be helpful as TRIDEC may consider targeting some of these areas for business recruitment.

## COMPETITOR AREAS

Both domestic and international areas were identified as potential competitors to Tri-Cities relative to target industries. Some of the international areas could also become source geographies for targeting prospects for the Tri-Cities region.

**TABLE 3 – COMPETITOR AREAS**

NEAR-TERM TARGETS	COMPETITOR AREAS
Energy: Small modular nuclear reactors	▪ Knoxville, TN
Energy: Smart grid	▪ Raleigh, NC
Logistics: Agriculture, Processed food, Wine & Craft beer	▪ The Okanagan Region of British Columbia, Canada ▪ American Canyon, CA in Napa County, CA
Food Processing	▪ Mexico ▪ Fresno, CA ▪ Yuma, AZ
Machinery Manufacturing: Food processing & Winery equipment	▪ Fond Du Lac County, WI
Training: Hazardous material handling, Emergency response & Security	▪ Various
NEAR-TERM TARGETS	COMPETITOR AREAS
Energy: Biofuel	▪ Alberta, Canada
Energy: Solar testing	▪ Alberta, Canada ▪ Yuma, AZ
Carbon Fiber Manufacturing	▪ Knoxville, TN

## ACTIONABLE RECOMMENDATIONS

The final of four reports for the TRIDEC New Economy Target Industry Analysis lays out specific actionable recommendations to enhance competitiveness for target industries as well as leading marketing approaches to raise top-of-mind awareness of Tri-Cities. The basis for these recommendations: address gaps or weaknesses identified in the Tri-Cities Competitiveness Report Card; target industry needs and opportunities; information gleaned from Competitor Intelligence; and cutting-edge practices – what competitive economic development organizations do (or should do) to win investment and jobs in target industry sectors. Although this is not a complete strategy, the ultimate goal of these recommendations is to generate a robust pipeline of leads and strengthen site selection factors in order to convert those leads into wins.

## ENHANCING COMPETITIVENESS

- **Product development:**
  - **Speculative buildings** – Develop buildings that align to the needs of target industries. More than 50% of projects only seek an existing building so this investment will increase the number of companies investigating the Tri-Cities.
  - **Certified sites** – Pursue third-party certification of sites to prove site readiness.
- Create partnerships for target industry initiatives.
- Align research capabilities to support world-class innovations, thus attracting attention from companies within the target industries.
- Engage industry representatives in driving target industry initiatives so that their needs are also met.
- Develop and implement relevant education workforce development programs to enhance available skills that are required by target industries.
- Every jurisdiction and port district in the Tri-Cities should develop a sustainability plan.

## COMPETITIVE POSITIONING

- Industry intelligence:
  - Become industry experts – go beyond target industry identification and learn about the industries to “speak” the language of prospects and better customize marketing and sales materials.
  - Competitor sleuthing – investigate how your competitors sell to their prospects of the same target industries.

- Business cases – provide clear, compelling cases, customized for each target industry, as to why a business should locate in Tri-Cities
- Tools:
  - TRIDEC Website Enhancements – basic site selection data is not enough to stand out from the competition.
  - Operating Cost Analysis – prove Tri-Cities competitive cost of doing business relative to competitors and source areas
  - Marketing Collaborations – think beyond traditional TRIDEC geography to leverage assets and partnerships to gain more market presence and attention.

## IMPLEMENTATION

TRIDEC will need to prioritize target industries and recommended actions to more efficiently allocate resources of time and budget. It may mean that some of the things that TRIDEC does now may need to stop or be adjusted to accommodate new and more competitive economic development practices.

## ACKNOWLEDGMENTS

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Dawn Alford – Columbia Basin College	Tim Arntzen - Port of Kennewick	LoAnn Ayers – WSU Tri-Cities
Linda Baird - Lamb Weston/ConAgra Foods, Inc.	Gary Ballew - Port of Pasco	Cheryl Cejka - Pacific Northwest National Laboratory
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TadZo is an economic development and site selection consulting firm led by Allison Larsen. Businesses and communities want essentially the same things: economic vitality, wealth creation, quality place and environment. TadZo works with communities to achieve these outcomes. TadZo also assist companies to identify communities with these attributes that support business strategy and competitive advantage.

This project for TRIDEC was completed in partnership with four other economic development site selection consultants:



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