Quadrennial Energy Review
Written Statement
"Deepwater Center for Workforce Excellence"

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BACKGROUND

Education is the key to a strong and vital workforce in any industry. For over eleven years, the Louisiana Community and Technical College System (LCTCS) has lead the way in educating and training the technical workforce in the State of Louisiana. As industry demand has increased, LCTCS has directed its colleges to appropriately align programming and enhance technology to meet industry needs/standards to produce more skilled and well-educated workers.

To achieve this goal, Fletcher Technical Community College (Fletcher) applied for and received approval of the official designation, "Louisiana Deepwater Center for Workforce Excellence," which specifically focuses on deepwater oil & gas production. The Center was developed and continues to operate in accordance with the requirement of Act 555 of the 2010 Regular Session of the Louisiana Legislature, LCTCS, and Board of Regents policy, adopted in June 2013.

A Center for Workforce Excellence provides opportunities for education and training programs to meet areas of need as identified and supported through partnerships with business and industry across the State. It is established with private sector support to be responsive to real-time market needs and the College's operation provides for a leveraged return on the institution's and community's investment. The Center provides significant opportunities to establish greater efficiencies for the postsecondary education system, the College, and its partners by focusing investment and state-of-the-art training around a workforce them in a centralized location. A Center for Workforce Excellence designation is an important economic driver, generating public and private investment, attracting talent, and creating an energized, entrepreneurial environment that prepares students to enter or advance in the workforce.

Fletcher has demonstrated that it is a statewide leader in the area of deepwater oil & gas production. With designation as a Center for Workforce Excellence comes the responsibility for leadership within the state and beyond. Implied in the designation is a commitment to concentrate and build on this strength by advancing knowledge and skills, thereby creating better opportunities for the citizens of the State of Louisiana.

Fletcher's Deepwater Center for Workforce Excellence will incorporate private and public sector support to emphasize education and training programs in partnership with business and industry to meet defined workforce training needs. One of the Center's strengths is its ability to develop and fine tune the program and curriculum in response to workforce needs. Its offerings will include programs and curriculum that are clearly related to the workforce and to which industries are willing to support and populate for employee training.

Fletcher's focus is in the upstream sector, and is uniquely strong in deepwater oil & gas production. Private industry support is exceptionally evident through our partnership with BP America, Inc. BP has generously donated $5,247,800 to date allocated towards the Integrated Production Technologies (IPT) program. $4 million was contributed to construct a 30,000 sq ft building (includes $1 million allocated to lab equipment) to house the training for the IPT program. This one-time donation was the largest contribution in the history of LCTCS. In 2012, Governor Bobby Jindal committed $4 million as a match in capital outlay funds to assist with the construction of the building. Building construction began in December 2012 and the Grand

Opening Ceremony was held on March 21, 2014. The commitments from BP America, Inc. and Governor Jindal highlight the state and industry support of Fletcher's Deepwater Center for Workforce Excellence.

The following Mission and Vision statements convey the purpose and values of the Deepwater Center for Workforce Excellence in oil & gas production:

***Mission*:** The mission of Fletcher Technical Community College's Deepwater Center for Workforce Excellence is to design and execute relevant technical training courses and programs, in close collaboration with energy industry experts, such that oil & gas industry stakeholders regard the Petroleum Division's graduates as the most competent at delivering efficient and safe oil & gas services.

***Vision*:** The vision of Fletcher Technical Community College's Deepwater Center for Workforce Excellence is to be regarded by students, potential students, other technical training institutions, government energy regulators, and oil & gas company employees as the premier deepwater oil & gas production training program.

INTEGRATED PRODUCTION TECHNOLOGIES (IPT)

The Center's targeted program of training includes deepwater oil & gas production, specifically Integrated Production Technologies (IPT). In addition to the IPT program, a new Production Maintenance program and Production Marine Services program will be developed to meet industry needs for both onshore and offshore skills and careers within the oil & gas industry.

The IPT program, an Associate of Applied Science (AAS) degreed program, provides specialized academic and technical skills training to prepare students for careers as technicians in the oil & natural gas production industry. With technology advances, many operators are currently requiring that new employees possess a certificate or degree in a related curriculum.

IPT training courses began in 2007; however, the AAS-degreed IPT program was officially launched in 2009 and has since achieved an enrollment increase of over 200% – from 55 students for the Fall 2010 Semester to 169 students for the Fall 2013 Semester. Due to industry demand for a skilled, deepwater workforce in oil & gas production, the response to the IPT program by both students and industry has been immensely positive and continues to grow. The program is estimating about 70 new students in the Fall 2014 semester.

The IPT program is accredited by ATMAE (the Association of Technology, Management, and Applied Engineering), and Fletcher Technical Community College is institutionally accredited by the Southern Association of Colleges and Schools (SACS) – Commission on Colleges. This not only gives students the ability to transfer academic credits to 4-year universities, but assures potential employers of high-quality workforce education and training.

A programmatic advisory committee was created in the 2008-2009 academic year. The committee is made up of industry partners who advise on such items as curriculum to ensure

that the program is constantly meeting workforce needs. Members from the following industry partners reside on the advisory committee: Black Hawk, BP, C&D Productions, Chevron, ConocoPhillips, Danos, Haliburton, Shamrock, Shell, and The Wood Group.

In order to achieve and/or maintain cutting edge instruction and since curriculum should be continuously evolving, BP America, Inc. has re-gifted $250,000 of the $1 million lab equipment donation towards curriculum development of the IPT program. This has been and will continue to be done through an external curriculum and industry expert, hired by Fletcher Foundation.

The first course redeveloped was Fluid Mechanics. This course examines the physics of fluids (liquids and gases). Therefore the course includes many challenging physics and mathematical concepts that cover the various properties and behaviors of fluid, such as velocity, pressure, density and temperature. The fluid simulation software is driven by a powerful physics engine that addresses these very same properties of fluids. To maximize the fluid simulation's potential as the Fluid Mechanics course application, a Ph.D. engineer (course instructor) specializing in fluid control is partnering the effort with Fletcher's Director of Research and Development. The fluid simulations are embedded into the Fluid Mechanics power-point presentations. Both students and instructor have reported greatly improved understandings and clarity of physics topics in those areas where the simulations are present.

VISION OF THE PETROLEUM DIVISION

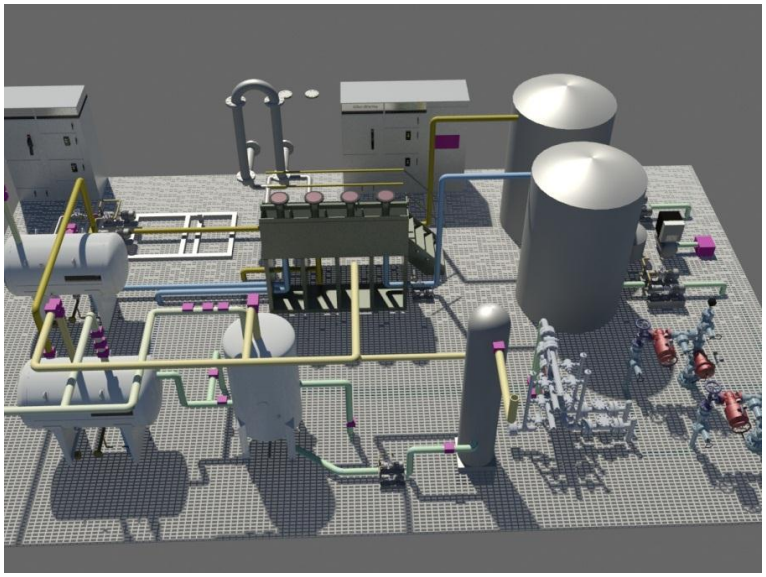
Completion of BP IPT Building

Thanks to a $4 million investment, made by BP America, Inc., and a Louisiana State Legislative match of $4 million, Fletcher has recently opened its doors to brand new "BP Integrated Production Technologies Building." This building will accommodate the projected enrollment growth, the need for additional space to house newer IPT lab equipment, and the need to situate the IPT classrooms, labs, and future Production Skid at one location. Construction of the 30,000 sq. ft. facility began in December 2012 and was completed in March 2014. The facility also houses a 4,000 sq ft state-of-the-art lab, with over $600,000 worth of equipment. In addition to the lab, the new building houses 5 lecture rooms, 5 computer labs, 10 offices, and an area allocated towards an outdoor Production Skid.

Future Building of a Production Skid

Another critical and vital component of a high-quality technical program is a hands-on equipment and systems platform, or Production Skid. The Skid is an outdoor platform that incorporates most of the major equipment found on a deepwater oil & gas production rig, where students learn how to use/handle pneumatic and controlled devices on the system and how to keep the system operational. The Production Skid simulates the separations of crude into the oil, water, and gas components, and shelf, shale play and conventional hydrocarbon production. The Production Skid can also simulate real-world upsets, teaching students troubleshooting skills, using root cause analysis techniques.

A new Production Skid will be operated from a detached control room located inside of the BP IPT Building. The estimated total cost of building a new Production Skid is $1.5 million. The Skid can also be used for the Production Maintenance and Production Marine Services programs and for incumbent worker training. A preliminary 3D image of the proposed skid is shown below.



Future Production Maintenance & Production Marine Services Curricula & Buildings

The curriculum for the Production Maintenance program is scheduled to be written during 2015 such that Production Maintenance courses will be offered by the Fall Semester 2016. An additional building will also be necessary to house this program, as well as the proposed Production Marine Services program. Construction of the building is estimated to cost $7 million. During construction of the new building, Production Maintenance courses will be taught in the Fletcher main administration and classroom building, the IPT Building, and the

Technical Lab. With the completion of the new Production Maintenanc and Marine Services facility and lab, a total of 26 instruction and instructor rooms/offices will accommodate up to 334 students and up to 22 faculty at any one time.

As part of Fletcher's strategic plan, a level of excellence will be measured and become even more apparent due to the following:

- **Completion of the IPT Building**
- **Building a Production Skid**
- **Achieving ATMAE Accreditation for new petroleum programs**
- **Enhancing the IPT Program & Delivery Flexibility** – In addition to modifying existing courses based on industry and Industry Advisory Board input, a "flex time" delivery schedule has been created and will continue to expand into more on-line based and condensed courses.
- **Growing the Program for Specialized, Non-credit Workforce Training –** By working with oil & gas company training managers, and by utilizing the skills of curriculum specialists, a significant opportunity exists for the Petroleum Division to provide more non-credit workforce training courses.
- **Creating Production Maintenance & Production Marine Services Program**
- **Funding the Faculty Endowment** – Having more money available for Full-Time Faculty will allow the College to offer competitive salaries to recruit individuals (subject matter experts) in the oil & gas production industry.
- **Funding Student Scholarships / Endowments** – Although student enrollment growth in the IPT program is projected to continue, student endowments and scholarships will accelerate this growth and mitigate the effects of low unemployment in the oil & gas industry.
    - Fletcher Foundation has secured IPT student scholarships from the following companies: BP, AT&T, and the Fourchon Oilman's Association.
    - Fletcher Foundation has also secured a $50,000 endowed scholarship for the IPT Department, funded by BP.

With Terrebonne and Lafourche Parishes being deemed the oil & gas hub of the state, the official Deepwater Center for Workforce Excellence will help Fletcher market the IPT program and Petroleum Division on a national level and recruit students into the region. The IPT program currently has students from Hawaii, Texas, Mississippi, Florida, and California and has inquiries and/or student applications from West Virginia, Oregon, and North Carolina. The marketing base (or targets) will only expand even more so since becoming a Center. Additionally, over 90% of students graduating from Fletcher seek employment within the community. Fletcher continues to meet workforce demands. Meeting this demand will help to maintain the unemployment rates within the community as one of the lowest in the state.

The demand by oil & gas companies for qualified job applicants and for supplemental employee training is fueled by the growth in U.S. oil & gas production (including deepwater production), by the impending mass retirements of the industry's most experienced "baby boomer" employees, by technological advances in oil & gas exploration, production and safety, and by the recent and aggressive implementation of offshore regulations. With advances in technology and rapid regulatory changes, especially in deepwater exploration and production, on-the-job

training is no longer sufficient, responsive or cost-effective. Thus, oil & gas companies are looking to technical and academic institutions for AAS-degreed graduates (for both their new hires and experienced employees) and for customized, non-credit employee training programs, delivered via the most effective media and responsive to the industry's nuanced workforce schedules. According to statements by oil & gas human resource executives and publication feature writers, the demand by oil & gas companies for AAS-degreed graduates will soon reach "crisis" proportions. As a result, 98% of the IPT program graduates have already secured employment with oil & gas companies. On average, their starting salary has been $60,000.

* The demand by oil & gas companies for qualified job applicants and for supplemental employee training is cited in Appendix C (www.Rigzone.com and www.ngoilgas.com)

Companies hiring Integrated Production Technologies graduates from Fletcher Technical Community College (as of December 2012):

Oil & gas companies are in need of pre-qualified, pre-skilled replacement workers for "The Big Crew Change". They are seeking educational institutions to provide deepwater current and potential employees with a training program that accommodates their unique schedules, regulatory requirements and work environments. The companies are seeking educational institutions where students and workforce trainees can go for career-relevant, regulatory-sensitive, technology-competent, and industry-responsive oil & gas instruction.

Fletcher Technical Community College is vigorously addressing these needs. The College's Petroleum Department, with its deepwater oil & gas production focused program in Integrated Production Technologies (IPT), has initiated a plan to quickly close the gap between the oil & gas industry's critical demand for a technologically-advanced workforce and the impending retirement of nearly half of the industry's most experienced employees.

The table below outlines the plan for the next five years of operation to maintain and enhance the performance of the Deepwater Center for Workforce Excellence. The highlighted sections list the infrastructure already in place to ensure future viability.

PETROLEUM DEPARTMENT – INVESTMENT REQUEST ITEMS	
Items	**Investment Request**
Phase 1	
BP IPT Building	$7.0 million
BP IPT Lab Equipment	$1.0 million
Production Skid	$1.5 million
Faculty Endowments	$3.0 million
Student Endowments Scholarship	$2.0 million
Curriculum Specialists	$0.2 million
TOTAL Phase 1	**$14.7 million**
Phase 2	
Production Maintenance & Marine Services Building	$7.0 million
Production Maintenance & Marine Services Equipment	$.75 million
Faculty Endowments	$2.5 million
Student Endowments Scholarship	$2.0 million
TOTAL Phase 2	**$12.25 million**
TOTAL Phase 1 & 2 Request	**$26.95 million**