

사 장



호주정부 초청 국외출장 요약보고서

2019. 8. 19

 한국가스기술공사

I. 출장 목적

- 세계 최대 수소 생산 및 수출 추진국인 호주 정부 초청 회의 참석으로 국가 및 기업간 원활한 사업 추진을 도모하고, 에너지·기후환경 장관 등 핵심 인사와의 교류를 통해 호주 수소 사업 전략 동향 등을 파악하고 함.
- 당사가 참여중인 AHEC(호주수소수출컨소시엄) Porposal 제출과 관련하여 남호주 정부 등과 협의하고자 함.

II. 출장 일반

- 출장기간 : '19. 8. 10(토) ~ 8. 17(토) [6박 8일]
- 출장장소 : 캔버라, 멜버른, 에들레이드, 브리즈번 (남호주 등 4개주)
- 대 상 자 : 기술사업단장 조용돈, 기술연구소장 박영우 (2명)
- ※ 총 방문단 현황 : 이원욱국회의원 등 총 18명

III. 주요 일정별 내용

일 자	장 소	내 용
8.12(월)	캔버라	<ul style="list-style-type: none"> ▪ 캔버라 수소산업 전략 공유 ※ ACT Commisioner(호주투자자처 장관) 등 참여 ▪ CIT(Canberra Institute of Technology) & Evoenergy 와 협력 연구과제 “수전해 설비 및 관련 Utility” 참관 ▪ ANU(호주국립대학) 및 호주수소전략TF 간담회 - 한국 수소로드맵 발표 - 호주 수소산업 향후 로드맵 방향성 공유 - ANU 연료전지 개발 기술 등 공유 - AHEC Proposal 설명(Roundtable) ※ ANU 부총장 등 참석
8.13(화)	멜버른	<ul style="list-style-type: none"> ▪ CSIRO(호주 연방과학산업연구기구) 방문 및 수소 생산 기술 연구 동향 파악 ※ 수소에너지 연구담당 책임자 등 동행 ▪ 테즈메니아 주 정부 주최 간담회 - 테즈메니아 신재생에너지 자원 소개 및 투자 의견 공유 - 한국의 수소 로드맵 공유 및 AHEC Proposal 설명(Roundtable) ※ 테즈메니아 투자부 Director 등 참석 ▪ ARENA(호주재생에너지청) 및 HMA(수소협회) 간담회 - 한국 수소로드맵 발표 및 AHEC Proposal 설명(Roundtable) - 호주 수소 시범도시 구축 요청안 등 논의(Roundtable) ※ ANENA 청장 및 HMA 회장 등 참석

< 1차 (2019.8.13)
 Reception (2019)

일 자	장 소	내 용
8.14(수)	멜버른	<ul style="list-style-type: none"> ▪ Fortescue Metals Group(포르테슈철강그룹) 미팅 - 포르테슈철강그룹의 수소생산 등 밸류체인 공유 - 수소로드맵 공유 및 생산외 저장 운송에 대한 의견 공유 ※ 수소사업부 Director 등 참석
8.15(목)	에들레이드	<ul style="list-style-type: none"> ▪ Tonsley 수소혁신파크 방문 간담회 - 남호주 정부의 수소로드맵 공유 - 한국 수소로드맵 발표 및 AHEC Proposal 설명(Roundtable) - 남호주 등 에너지 기업 수소 생산기술 공유(H2U 등) - 수소혁신파크 참관 ※ 남호주 에너지광업부차관 등 참석 ▪ 남호주 통상관광투자자부 방문 협의 - 남호주 신재생에너지 현황 및 상호 상생 방안 협의 ※ 남호주 통상관광투자자장관 등 참석 ▪ 우드사이드 에너지사 미팅 - 우드사이드의 수소 생산 수출(안) 발표 및 협의 - 한국 수소로드맵에 기초한 AHEC Proposal 설명(Roundtable) ※ 우드사이드 탐사개발 부사장 등 참석 ▪ 남호주 총독 주최 간담회 참석 - 남호주와 한국간 수소산업 인프라 구축 의지 표명 및 협의 ※ 남호주 총독 등 참석 ▪ 서호주 주최 간담회 참석 - 서호주의 수소생산 수출 의지 표명에 따른 의견 교환
8.16(금)	브리즈번	<ul style="list-style-type: none"> ▪ 퀸즈랜드 정부 주최 수소 간담회 참석 - 퀸즈랜드의 수소 생산 및 수출 의지 표명 및 방향성 공유 - 한국 수소로드맵 발표 - 현대수소자동차 개발 현황 및 향후 방향성 발표 - AHEC Proposal 설명(Roundtable) ※ 퀸즈랜드주 개발장관 등 참석 ▪ 그린프스센터 수소시설 및 Origin Energy 방문

IV. 주요 내용 요약

□ 호주연방정부 및 각 주(State)는 수소 생산 수출에 큰 관심을 가지고 있으나 수소생산기술을 제외한 생산 방향성 및 저장·수송에 대하여 아직까지 구체적인 내용은 없음. 향후 1년내에 호주 Alan Finkel 박사가 이끄는 COAG Energy Council 에서 그 방향성이 최종 결정될 것으로 보임.

□ 한국측은 본 방문을 통해 한·호 상호 협력과 상생을 위해서 호주 수소 로드맵 재구성시 한국의 로드맵과 연계되어 구성 되길 요청하였으며, 특히 호주 내에서도 수소산업 육성을 위해 Test Bed 수소도시가 구축되길 요청함.

□ 지속적인 한·호간 수소산업 연계 및 육성을 위해서 실무적인 차원에서 민간부분의 Working Group 형성을 통해 활발한 활동이 이루어 지기를 상호 공감함.

□ Roundtable 회의시 한국가스기술공사는 AHEC(호주수소수출컨소시엄) 참여사로서 남호주 정부 및 우드사이트 등에 “액화수소 수출·입 저장 터미널 개념설계” 연구과제에 대한 Proposal 설명을 통해 다각적으로 협력 방안에 대하여 논의·공유함.

2019년 8월 19일

작성자 : 박영우 연구소장

[붙임1]

일정별 사진

<p>'19.8.12 캔버라</p>	 <p>[CIT Bruce/Evo Energy 건축 사진]</p>	 <p>[호주수소전략 TF 간담회 사진]</p>
<p>'19.8.13 멜버른</p>	 <p>[CSTRO 현장시찰 사진]</p>	 <p>[에너지·환경 기후변화 관련 미팅 사진]</p>
<p>'19.8.14 멜버른</p>	 <p>[Invest Victoria 가스-수소 간담회 사진]</p>	
<p>'19.8.15 애들레이드</p>	 <p>[남호주 수소산업 미팅 사진]</p>	 <p>[서호주 주최 간담회 사진]</p>
<p>'19.8.16 브리즈번</p>	 <p>[정부 주최 간담회 참석자 사진]</p>	 <p>[그린피스센터 수소시설 현장시찰 사진]</p>

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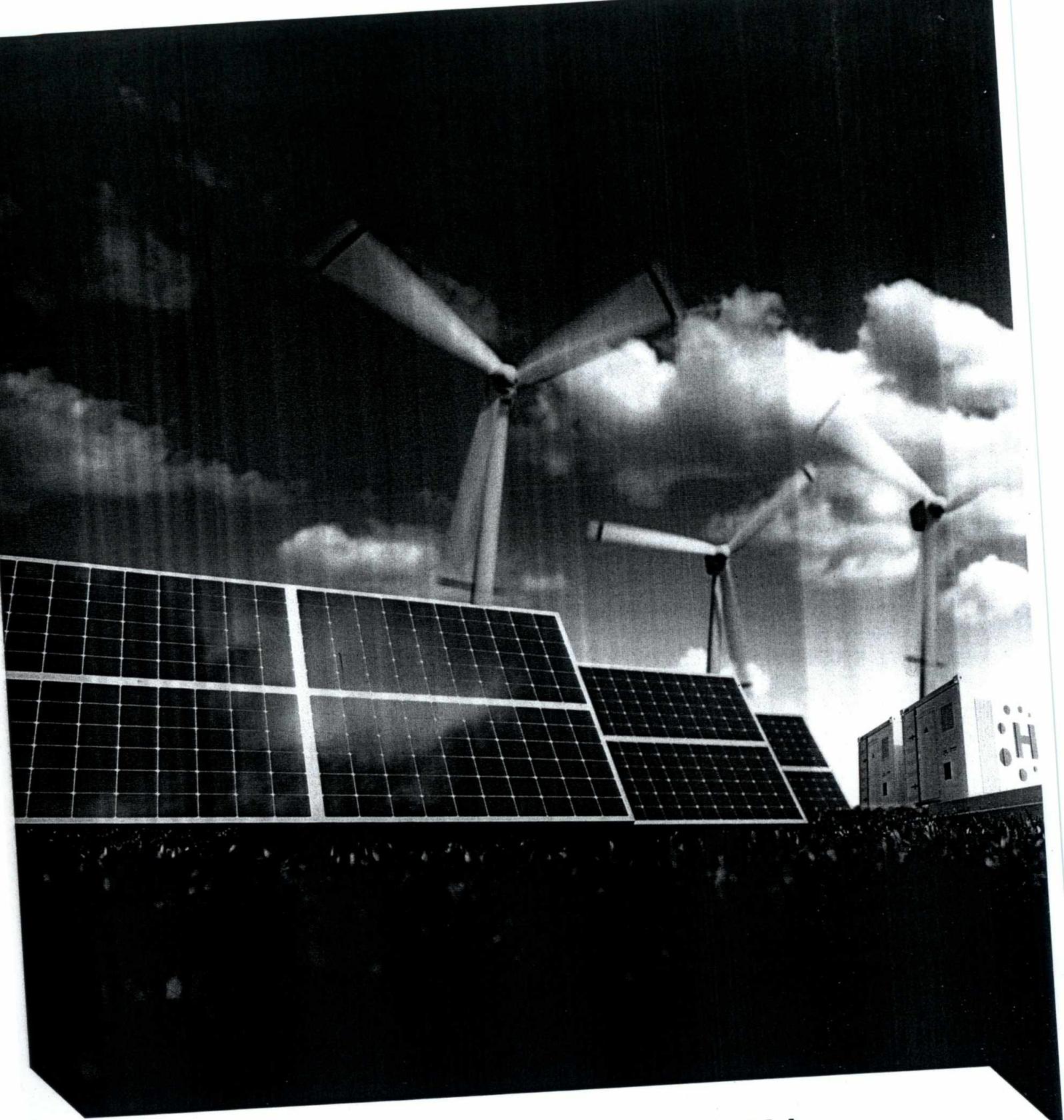

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QUEENSLAND HYDROGEN INDUSTRY STRATEGY

2019–2024

May 2019



Queensland
Government

Foreword from the Premier

Hydrogen provides the opportunity to export Queensland's sunshine to the world and support more jobs in regional Queensland.

My Government's record of attracting investment in renewables combined with our existing gas pipeline infrastructure and export facilities make us the ideal state to lead the future production and export of hydrogen.

We backed the \$60 billion LNG industry providing thousands of jobs for our regions.

Now the world is looking to hydrogen and we want them to get it from Queensland so we can create even more jobs in our regions.

This emerging industry will have enormous economic benefits for Australia, worth an estimated \$1.7 billion in exports annually by 2030.

Now is the time for Queensland to position itself as a significant hydrogen trading partner with our international neighbours.

I have met with Government officials and major companies in Japan and South Korea to discuss the potential for Queensland to export 'green hydrogen' produced using renewable energy sources. Both countries have ambitious plans for renewable hydrogen to meet their domestic energy needs, and Queensland is well-placed to support the energy goals of these long-standing trading partners.

Earlier this year, we celebrated our State's first delivery of green hydrogen to Japan, exported by the Japanese petroleum conglomerate JXTG. This was produced at the Queensland University of Technology's solar cell facility at the Queensland Government's Redlands Research Facility.

Queensland's and Australia's growing populations and economies also require increasing supplies of reliable, affordable and preferably renewable power. Manufacturing sectors that use hydrogen in their processes will also benefit from a reliable domestic supply.

My government's priorities are creating jobs in a strong economy and supporting the development of this industry strongly aligns with that.

The \$19 million committed to this strategy will give Queensland the best start possible to succeed in becoming a hydrogen exporter of choice for the world.



The Honourable Anastacia Palaszczuk MP
Premier of Queensland and Minister for Trade

Foreword from the Minister

Creating jobs of the future while propelling and diversifying our economy remains a key focus of our government.

That's why we're committed to growing Queensland's hydrogen industry as it holds significant potential for our state: for employment, investment and overseas export.

The development of a domestic hydrogen industry, including the production of competitively priced renewable hydrogen, will have widespread economic benefits.

Hydrogen is a versatile energy carrier with a diverse range of applications, including energy supply and transport and industrial applications like biorefineries.

Gladstone, one of Queensland's industrial powerhouses, will be a focus point for hydrogen development, and for good reason.

Existing industries, gas infrastructure, access to a deep-water export port and skilled local workers make it an attractive location for this emerging industry.

Gladstone also has a strategically placed State Development Area, that through the powers of the Coordinator-General, gives our government the ability to facilitate large-scale industrial development.

Working in partnership with local researchers and international partners, and leveraging advanced manufacturing technologies, systems, products and services, Queensland is primed to develop a safe and sustainable hydrogen industry that has the potential to generate wealth, jobs and economic growth for our state.



The Honourable Cameron Dick MP

Minister for State Development,
Manufacturing, Infrastructure and Planning

About the strategy



A Queensland hydrogen industry has the potential to deliver significant economic, employment, energy security and environmental benefits for Queensland and Australia.

The Queensland Government is committed to developing a sustainable hydrogen industry.

Queensland has a unique competitive advantage in the production of renewable hydrogen. With its close proximity to Asia, established infrastructure, manufacturing capabilities and renewable energy potential, Queensland is well-positioned to benefit from the global transition to a low-emission energy future.

In September 2018, the Advancing Queensland's hydrogen industry discussion paper was released by the Queensland Governmentⁱ. Thirty-three submissions were received from a broad range of stakeholders, identifying opportunities for, and the challenges faced by the hydrogen industry. The feedback, along with an extensive program of meetings with industry and researchers, has shaped the development of the Queensland Hydrogen Industry Strategy 2019–2024 (the strategy). The strategy is underpinned by comprehensive research on national and international trends and best practice approaches adopted in jurisdictions with growing renewable hydrogen industries.

The objective of the strategy is to drive the development of an economically sustainable and competitive hydrogen industry that creates economic growth, opportunities for new export markets, generates the highly skilled jobs of the future, while supporting the transition to a low-emission economy. The strategy will ensure that government and industry work towards a common vision for Queensland's future hydrogen industry, with specific actions in five focus areas.

Implementation of this strategy will help us take advantage of the many opportunities for domestic energy uses, new export markets and skilled jobs from hydrogen, while also benefiting from cleaner energy generation and lower carbon emissions.

Success will be seen through a demonstration of industry confidence, measured by strong investment in the hydrogen industry, growing production of cost-competitive renewable hydrogen and the creation of new high-tech jobs across the industry.

Growing a sustainable hydrogen industry is consistent with the Queensland Government objectives for the communityⁱⁱ.