

문서번호 APCC-출장-16-0764(2016-07-18)

TRAVEL REPORT FORM

출장보고서

결 재	선임연구 원	팀장	부서장	원장
	07/13	07/14	07/18	07/18
협 조	전종안	조재필	김형진	정홍상

I. Reporter 보고자

Department 소속	Position 직위(직급)	Name 성명	Travel Date 날짜	Note 비고
응용사업본부	본부장	김형진	2016/7/3-10	※ 조직개편으로 인하여 출장신청 서 결재라인과 출 장보고서 결재라 인이 서로 다름
	선임연구원	전종안		

II. Major Activities 주요업무 수행내용

1. Main Contents and Activities 주요내용 및 활동

1) Summer Course on Climate and Energy 참석

- 일시: 7/4-7
- 장소: University of East Anglia

2) Green Climate Fund (GCF) Proposal Drafting Workshop 참석

- 일시: 7/8
- 장소: University of East Anglia
- 참석: Representatives of GFCS countries including Papua New Guinea (PNG), APCC, NOAA, WMO

2. Relevance to APEC Climate Center's Activities 결론 및 소감

1) Summer Course on Climate and Energy 참석

- 기후자료와 농업, 수자원, 에너지 등 응용섹터와의 효과적 연결에 대한 주제가 있었으며, APCC의 응용섹터가 그 동안 연구를 해온 관심분야와 크게 다르지 않았음.
- 기후서비스는 최종사용자 (End users) 혹은 의사결정자 (Decision-makers)가 바로 이해 할 수 있는 정보로 변환하여 전달하여야 효과적임.
- 예를 들어, Solar Farm (태양광 발전 시설)의 경우 일사량의 정보가 아닌 이를 바탕으로하여 solar farm에서 생산 가능한 power의 형태로 변환하여 의사결정자에게 전달하여야 함
- 이미 유럽에서는 Climate-Food-Energy Nexus를 바탕으로 연구를 수행 중 (Nexus는 각 섹터의 상호 연결 및 상호 의존성을 고려한 종합적 관점임. 따라서 다른 섹터를 고려하지 않고 어느 한 섹터만을 위한 정책이나 전략은 효과적이지 않아, 위의 섹터들의 상호의존성 등을 고려하여 종합적 정책이나 전략을 마련해야 함)
- APCC도 농업, 수자원, 에너지 등의 여러 섹터를 종합적으로 고려하는 NEXUS연구 도입이 필요

해 보임.

2) Green Climate Fund (GCF) Proposal Drafting Workshop 참석

- GCF Funding 구조 및 절차에 대한 이해를 넓힐 수 있었음
- GFC가 기후서비스 우선대상국으로 선정한 8개국 중 APEC member economy이기도 한 PNG의 에너지 분야 현황 및 기후서비스에 관한 수요 파악
- PNG는 APCC에게 상세 계절예측자료 공급을 요청하였음.
- 현재 APCC의 인적 자원을 고려하였을 때, Renewable energy source중 hydro power부문에서 상세계절예측자료를 바탕으로 효과적이며, 안정적 전력생산과 수자원관리 등을 목적으로 하는 댐운영시스템 개발에 참여가능하며, 이를 PNG측에 제안하였음.
- PNG는 에너지섹터에 대한 기후서비스라는 주제로 GCF Funding proposal 작성할 예정이며, APCC는 상세계절예측을 활용한 댐운영시스템 구축분야에서 PNG와 협력하여 제안서를 작성하기로 합의
- Concept note를 우선 GCF에 제출 (8/8까지) 하기로 합의하고 공동으로 작업 중 (현재 email로 지속적으로 컨택하고 있음).
- 이 사업이 실현된다면 APCC의 응용섹터를 에너지분야로 확대할 수 있을 것으로 기대 됨.

III. References 참고사항

(with attachment of any information or report in case of attendance of conferences, workshops and meetings) 학술대회, 워크숍, 회의 등 참석 시 관련 정보 및 문서 첨부

1. Presented and Collected Materials 주요 수집자료

2. Suggestions and Remarks 건의사항



World Energy & Meteorology Co

Weather & Climate for the Energy Industry

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Summer Course on Climate and Energy

Applications of weather & climate information for
the energy sector

Monday 4th – Thursday 7th July 2016
University of East Anglia, Norwich, UK



EUPORIAS

[Background](#) | [Venue](#) | [Committee](#) | [Lecturers](#) | [Schedule](#) | [Registration](#) |
[GCF Workshop](#)

Background

Energy systems are the engine of economic and social development, thus their investments represent generally a sizeable portion of the country's GDP. Energy planning and operations are markedly affected by meteorological events. Both day-to-day weather and longer-term climate variability have impacts on supply, demand, transport and distribution and energy markets. In addition, the energy sector is undergoing enormous fundamental changes associated with climate. On one hand, a transition to increased energy supply from renewables is essential for reducing greenhouse gas emissions and meeting future energy demand. On the other hand, there is a need to ensure climate resilience across the sector.

Despite the sector being one of the most advanced users of weather and climate information, its rapid evolution constantly creates new needs, significantly increasing the necessity for effective collaboration between meteorologists and energy sector stakeholders. Scientific progress alone is insufficient to increase the value of climate and weather predictions. Improving decision-making processes will require improving communication and mutual understanding between energy specialist and climate scientists.

Co-organised by the World Meteorological Organization (WMO), the Global Framework for Climate Services (GFCS), the World Energy & Meteorology Council (WEMC) and supported by the EU project EUPORIAS, the purpose of the course is twofold:

- Update energy practitioners on the state-of-the-art in weather and climate modeling and forecasts at different timescales.
- Create awareness about the application of weather & climate information for the energy sector and help foster a dialogue between both communities to address major energy challenges in upcoming years.

The course will offer opportunities for discussions and practical examples. These activities will also be aimed at the drafting of mini-proposals for an energy climate service. In addition, the course will include a guest lecture to provide in-depth exploration of the current frontiers in the energy and climate nexus.

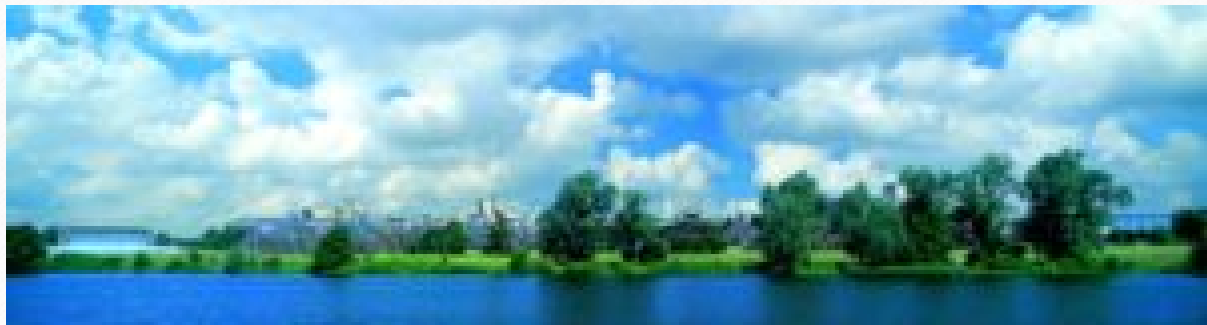
The course is targeted at energy sector specialists with a broad understanding of meteorology and climate, and to meteorologists and

climate scientists who wish to better understand the energy business. World-class experts in these fields will deliver the lectures, which will constitute the core of the course and stimulate peer-to-peer learning among participants.

The course will accommodate no more than 30 students, with roughly equal numbers from developing and developed world institutions and climate and energy experts. [Back to top](#)

Venue

The venue is on the campus of the University of East Anglia (UEA).



The [UEA campus](#) lies at the outskirts of Norwich, Norwich, NR4 7TJ, UK. Norwich is one of the most vibrant and attractive cities in Europe. It is ranked in the Top 10 shopping cities in the UK and as well as being a hotbed for the arts, culture, music, nightlife, and tourism. [Back to top](#)

Steering committee

The course will receive guidance from a steering committee consisting of experts and other volunteers. Steering committee members contribute to the preparation of the course, including practical sessions and local visits, and student selection. The steering committee is composed of:

- Alberto Troccoli (WEMC/UEA)
- Roberta Boscolo (WMO)
- Sue Ellen Haupt (NCAR/WEMC)
- Laurent Dubus (EDF/WEMC)
- Steve Dorling (UEA/WEMC)

- Clare Goodess (UEA)
- Carlo Buontempo (UK MetOffice)

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Lecturers and topics

- Prof. Alberto Troccoli (WEMC/UEA) – Introduction on weather and climate services for the energy sector
- Dr Laurent Dubus (EDF/WEMC) – World energy overview / what is an energy system? How does it work?
- Dr Sue Ellen Haupt (NCAR/WEMC) – Lessons learned from the shorter ranges: weather forecasting for energy applications
- Dr Steve Dorling (UEA/WEMC) – Operational meteorological services for the energy industry
- Dr David Brayshaw (U Reading) – Weather and climate impacts on the energy sector
- Dr Clare Goodess (UEA) – Understanding climate predictability and uncertainty (seasonal to decadal)
- Dr Carlo Buontempo (Met Office/ECWMF) – European Climate Services
- Dr Emily Wallace (Met Office) – Site specific wind resource assessment, solar maps for pricing solar low production insurance
- Mr Asher Minns – Climate change communication and tackling specific communication issues
- Guest Lecturer – Energy Industry practitioner (TBA)

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Tentative schedule

Monday 4th July 2016

1300 – 1345	Introduction & Round the Table (R Boscolo & A Troccoli)
1345 – 1430	Lecture 1 (A Troccoli)
1430 – 1530	Lecture 2 (L Dubus)

1530 – 1600	<i>Break</i>
1600 – 1730	Practical: Imagining (planning) an energy climate service for your country (S Haupt et al.)
1900	<i>Dinner</i>

Tuesday 5th July 2016

800 – 900	<i>Breakfast</i>
900–1000	Lecture 3 (S Haupt)
1000–1100	Lecture 4 (E Wallace)
1100–1130	<i>Break</i>
1130 – 1245	Practical: Drafting a mini-proposal for an energy climate service: Part 1 (A Troccoli et al.)
1245–1315	<i>Packed lunch</i>
1315–1800	Local visit (TBA)
2000	<i>Dinner</i>

Wednesday 6th July 2016

800 – 900	<i>Breakfast</i>
900–1000	Lecture 5 (S Dorling)
1000–1100	Lecture 6 (C Goodess)
1100–1130	<i>Break</i>
1130–1230	Lecture 7 (D Brayshaw)
1230–1400	<i>Lunch</i>
1400–1500	Lecture 8 (C Buontempo)
1500–1600	1-min 'poster/elevator pitch' presentations
1600–1630	<i>Break</i>
1630–1730	Lecture 9 (A Minns)
1900	<i>Dinner</i>

Thursday 7th July 2016

800–900	<i>Breakfast</i>
900–1000	Lecture 10 (Guest lecturer)
1000–1130	Practical: Drafting a mini-proposal for an energy climate service: Part 2 (A Troccoli et al.)

1130–1200	<i>Break</i>
1200–1300	Presentations of mini-proposals
1300–1400	<i>Lunch</i>
1400–1530	Feedback on mini-proposals
1530–1600	Closing and Farewell

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Registration

Registration has now closed. Applicants are being notified. Please contact Alberto Troccoli at info-at-wemcouncil.org or Ms Roberta Boscolo at rboscolo-at-wmo.int if you don't hear about your application by Wednesday 8 June 2016.

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Green Climate Fund (GCF) Proposal Drafting Workshop

By invitation only

UEA, Norwich, UK, Friday 8 July 2016

Concept Note

For Selected participants and resource persons, the summer course will be followed by a daylong workshop focused on drafting inputs for preparation of country components of a proposal to the Green Climate Fund (GCF) by the World Meteorological Organization.

These participants will comprise formally designated representatives of about eight developing countries (among Bhutan, PNG, Burkina Faso, Tanzania, Dominica, Moldova, Peru and Colombia) who have agreed to participate in a potential GCF project. For this project WMO is partnering with International Energy Agency (IEA), World Bank (WB), International Renewable Energy Agency (IRENA), World Business Council for Sustainable

Development (WBCSD), World Energy and Meteorology Council (WEMC) to develop dedicated climate services for energy that will support:

1. Improved climate-related energy outcomes, specifically:
 - mitigation, through facilitating the expansion of renewable energy and
 - adaptation of the energy sector, through enhancing climate resilience and efficiency
2. Develop consolidated tools, methods, processes for implementing climate services in the identified countries in order to provide technical advisory, planning and coordination services for implementation in other countries.

The outcomes of this meeting, facilitated by resources staff, will be used to consolidate the inputs for the GCF proposal and its finalization.

For additional information, please contact Ms Roberta Boscolo at rboscolo-at-wmo.int

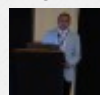
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