



SDG 7 / TWSGDG 7

確保人人都能享有

可負擔、穩定、永續且現代的能源

從學術到實踐，串連全國永續發展

2021年3月26日於環境學院隆重舉行「臺灣永續棧 @ 東華大學」暨「國立東華大學生態及永續科學跨領域研究中心」揭牌儀式，科技部林敏聰政務次長與東華大學趙涵捷校長共同主持揭牌開幕，多位來自學術界、政府機構、在地社群、公民社會及產業界的貴賓，共同見證科技部與東華大學協力從學術到實踐、連結在地與全國，積極與科技部所推動成立的臺灣永續棧，建立全國性的學術與實踐網絡及協作平台，與其他平台成員形成網絡串連，分享相關經驗與知識，締造永續新里程碑，並建立更深厚的校際間合作關係。

3月26日至27日由臺灣永續棧與東華大學共同召開「以長期生態與社會經濟研究為本之再生能源發展」論壇，特別針對東部地面型太陽能光電發展所涉及之四個關鍵生態與社會經濟議題，包括森林碳吸存、重要物種保育、社會經濟影響，及與原住民族諮商同意權行使，邀請學界、政府、私部門、公民社會、在地社群及相關權益關係人，進行學術與實務的深入對話。

維護多元生態，建置通量研究站

位於花東縱谷的大農大富平地森林，是自2013年至今，環境學院的科技部計畫研究樣區，在科技部支持下，結合其周邊的多樣土地

利用類型，2017年建置通量研究站，為國際通量研究網 (FLUXNET) 及各區域網路 (如亞洲通量網 AsiaFlux) 的標準研究設備。打造國內社會生態系統韌性，及生態系碳收支等科學問題的重要研究場域，也吸引包括西班牙和德國等國家的科技部國際合作。

這些分布於全球各種生態系的個別通量站，除能為所在生態系提供直接的碳吸存科學數據，更進一步能為生態系模式以及基於衛星遙測的全球大尺度碳收支模型提供驗證資料。當前臺灣平原地區面對的各種土地利用類型轉變，也牽涉到轉變後的整體土地碳吸存能力變化，大農大富通量站為國內5個長期森林通量站之一，能共同提供臺灣東西部平地森林的碳吸存數據，也因此能為可能的土地利用變遷政策提供基礎科學數據。

臺灣地面型太陽光電治理工作坊

臺灣在推動能源轉型的過程中，太陽能光電一直佔有相當程度的比例，但也因其土地需求面積較大，可能造成爭議議題或衝突，因此生態與永續科學跨領域研究中心展開相關之社會經濟與生態研究工作，透過不同專業實務工作者的訪談，及國內外相關文獻研析，盤點出臺灣地面型光電治理的11項相關議題，再針對這些議題，逐步辦理各項主題之工作坊，就各議題具體牽涉的法規、制度、知識技術指引等進行細部討論。第1場次治理工作坊已於2021年12月3日在環境學院舉辦，由自然資源與環境學系戴興盛教授主持，邀請20多位學界、公民團體、產業界等專家實務工作者，就「環境與社會衝擊評估與因應機制」進行深入的研析，作為未來與各界社會對話、政策與行動倡議等之基礎。東華將持續透過與政府、學界、公民團體與產業界等代表，就各子議題進行研商，促進臺灣建立良好的地面型光電治理政策與制度，使臺灣順利向2050年淨零轉型目標邁進。



Connecting Academia to National Sustainable Development

The grand opening of the Taiwan Sustainability Hub @ NDHU and CIRES Taiwan on 26th March 2021 by MOST Undersecretary Min-Tsong Lin and NDHU President Chao was witnessed by guests from academia, government bodies, regional social groups, civil societies, and industries. The efforts of MOST and NDHU were devoted to academy, application, connecting local and national, and the establishment of Taiwan Sustainability Hub as a collaboration platform of national-level research and application. The establishment links with other platform members to share experiences and knowledge that contribute to other sustainability milestones, thus enhancing inter-school collaboration.

A 2-day 'Renewable Energy Development Based on Long-Term Ecology and Social Economy Study' forum was held 26th-27th March by organizers Taiwan Sustainability Hub and NDHU. The talk focused on four ecology and social economy issues, namely forest carbon sequestration, key species conservation, social economy impact, and indigenous right to consultation and use, that are involved in the development of East Taiwan ground-mounted PV, and was elaborated theoretically and practically among academia, government, private sectors, civil society, regional social groups, and stakeholders.

Flux Station for Ecological Diversity

Danongdafu Forest Park of East Rift Valley is a MOST research quadrat that has remained active since 2013 as a project under the College of Environmental Studies. Taking advantage of the mixed land use around the

location, a flux site was made in line with FLUXNET and AsiaFlux standards in 2017 for national social ecology system resilience and the study of the ecosystem carbon budget. The project is also part of collaborations with technology departments in Spain and Germany.

In addition to providing direct carbon sequestration data of the surrounding ecosystem, these individual flux stations deployed across ecosystems can further provide validation data for ecosystem models and global satellite telemetry-based large-scale carbon budget models.

The change of land purpose of plains in Taiwan involves altering the entire sequestration capacity of the land afterward. Among four other long-term forest flux stations in Taiwan, the Danongdafu flux station generates the sequestration data of both the west and east Taiwan forest, and its basic scientific data can thus be useful for the potential purpose of land alteration.

Taiwan Ground-Mounted PV Management Workshop

Taiwan is on the path of the energy transition, and PV power is a significant part of it. The required area is vast and thus disputable and prone to conflict. CIRES has thus undertaken studies regarding relevant social economy and ecology. By talking to field experts and analyzing Taiwanese and international documents, 11 topics were pinpointed for Taiwan ground-mounted PV system control. Individual topics were then further elaborated based on applicable regulations, rules, instructions for knowledge, and techniques. More than 20 field experts and scholars from research, civil groups, and private businesses gathered on 3rd December 2021 for the first topic management workshop, hosted by Prof. Hsing-Sheng Tai of the Department of Natural Resources and Environmental Studies at the College of Environmental Studies. In-depth study and discussion were made regarding the Environmental and Social Impact Assessment and Response Mechanism, and the results of the workshop will serve as the infrastructure for future conversations with industries and societies, as well as for policies and initiatives. The dialogues will continue to explore each sub-topic amid authorities, academia, civil bodies, and corporations in order to facilitate an adequate ground PV policy and system, paving the way for the 2050 Net Zero goal.