

# SERVICES IN GLOBAL VALUE CHAINS

## SOLAR PANEL MANUFACTURING IN CHINA



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# SERVICES IN GLOBAL VALUE CHAINS

## SOLAR PANEL MANUFACTURING IN CHINA

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This case study, based on corporate survey methodology, undertaken with the Fung Global Institute (FGI) in Hong Kong, China, contributes to and forms part of a larger FGI study on the importance of services in global value chains. It outlines the value chain for solar panel production; identifies the types of services entering the value chain; and calculates their share in overall costs. The study finds that 40 services are required for this value chain, and three-quarters of those are partially or fully outsourced to third parties. The study highlights the impact of government policies in shaping the photovoltaic sector and the impact of trade policies on export-dependent manufacturing.

Descriptors: **China, Global Value Chains, Environmental Industries, Manufacturers, Services, Outsourcing, Trade Policy, Case Studies.**

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## Foreword

Quan Zhao's study of a Chinese solar panel manufacturer is in reality a study of the role of services in production. The study forms part of a wider project in which the ITC is an institutional partner with the Fung Global Institute (FGI) in Hong Kong. The project, initiated at FGI, seeks to analyse more deeply the role of services in production and consumption along global value chains (GVCs). It is based on a series of case studies which are intended to build insights to feed more systematic analysis.

Services are receiving greater attention today than ever before. Partly this reflects a broadly shared recognition that policymakers, analysts, scholars and sometime businesses have neglected the various economic contributions of services. The neglect has led to missed opportunities and policy miscalculations.

Several factors help to explain why the economic contributions of services have been under-appreciated. Historical habit of thought is one. Classical economic doctrine had it that services were worthless because value was equated to accumulation, and services could not be stored. Later on, fears arose that since populations produced and consumed proportionately more services as they grew richer, their economies would stagnate and decline because services could not contribute to growth through increased productivity. Added to that, the invisibility of services, their customized nature, the tendency for them often to be bundled with goods, combined with the huge challenges of measuring them, and the picture of past neglect is perhaps not surprising. But it is changing.

With the growing internationalization of economic activity, the rise of GVCs and intensified demand for services across a broad range of economic activities, interest has grown in trying to understand what and how services contribute to economic activity and human wellbeing.

Zhao's study of solar panel production sheds light on the variety of services used in GVCs, how they enter and what they can contribute. No fewer than 40 services are required for this value chain, and three-quarters of those are partially or fully outsourced to third parties. Outsourcing to this degree is not uncommon in many sectors. The implications of outsourcing opportunities for developing economies wishing to participate in value chains and upgrade that participation over time deserve careful study.

Finally, this project attempts to shed light on how government policies influence the configuration, location and cooperation of GVCs. Zhao's study identifies several key policy interfaces in the solar panel value chain. Services are more intensively regulated, and frequently more protected, than in many other sectors, and in virtually all economies. The collection of case studies that comprise the overall project will enrich our understanding of how governments can both help and hinder growth and development opportunities.

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## Acronyms

The following acronyms are used:

AFASE	Alliance for Affordable Solar Energy
CPC	Central product classification
EPC	Engineering Procurement Construction
EPIA	European Photovoltaic Industry Association
FGI	Fung Global Institute
GDP	Gross domestic product
GVC	Global value chain
IEA	International Energy Agency
IEC	International Electrotechnical Commission
IPO	Initial public offering
ISO	International Organization for Standardization
IT	Information technology
ITC	International Trade Centre
JET	Japan Electrical Safety and Environment Technology Laboratories
MW	Megawatt
PR	Public relations
PV	Photovoltaic
PVPS	Photovoltaic Power Systems Programme
R&D	Research and development
RMB	Renminbi
SOE	State-owned enterprise
TUV	TÜV Rheinland Group
UL	Underwriters Laboratories

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