



UNCTAD
UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT

CONSULTATIVE TASK FORCE ON (CTF) ENVIRONMENTAL REQUIREMENTS AND MARKET ACCESS FOR DEVELOPING COUNTRIES

UNCTAD-UNESCAP workshop
Bangkok, 25 and 27 May, 2005

ENVIRONMENTAL REQUIREMENTS AND MARKET ACCESS FOR DEVELOPING COUNTRIES: THE CASE OF ELECTRICAL AND ELECTRONIC EQUIPMENT (EEE)

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INTRODUCTION [1]

- Concern over environmental and health problems associated with growing volumes of post-consumer waste from EEE has triggered significant environmental policy initiatives.
- Comprehensive new environmental legislation in Europe and Japan. Also sub-national legislation in the US (e.g. California) and Canada.
- The EEE industry: production of components and assemblage increasingly outsourced to developing countries.
 - China, Malaysia, the Philippines and Thailand now supply more than 40 per cent of the value of total developed countries' imports of EEE (excluding intra-EU trade)
- Legislation and private-sector initiatives have implications throughout the supply chain.

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INTRODUCTION [2]

- The EEE sector is of dynamic export interest to several developing countries
- Developing countries need to make adjustments (a) to meet requirements transmitted through the supply chain and (b) address problems associated with growing volumes of domestic post-consumer EEE-waste.
- To achieve this, these countries not only need accurate and timely information, but also assistance in the interpretation of such information to make it relevant for adjustment strategies.

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ISSUES TO BE ADDRESSED

- What are the implications of environmental requirements in the EEE sector for exports from developing countries?
- What lessons that can be learned from stakeholder consultations in countries introducing new environmental regulations, as well as from consultation with third countries?
- What is the degree of awareness and understanding of these new environmental requirements and adjustment approaches in concerned developing countries?
- What pro-active strategies can developing countries apply to simultaneously adjust to external requirements and address problems related to growing volumes of EEE-waste at home?
- Recommendations and possible further CTF activities?

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STRUCTURE OF THIS PRESENTATION

- Legislation and private-sector initiatives
- Trade in EEE
- Implications for developing countries
- Consultations
- Adjustment processes in developing countries
 - China
 - [Malaysia]
 - Philippines
 - Thailand
- Recommendations

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LEGISLATION AND OTHER INITIATIVES

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LEGISLATION

- European Union
 - Waste Electrical and Electronic Equipment (WEEE) Directive
 - Restrictions on the Hazardous Substances (RoHS) Directive
- Japan
 - Home Appliances Recycling Law (HARL)
 - Law for the Promotion and Effective Utilisation of Resources (LPEUR)
- Switzerland
 - Ordinance on the Return, Take back and Disposal of Electrical and Electronic Appliances (ORDEA)
- United States and Canada (at sub-national level)
 - State of California, the Electronic Waste Recycling Act of 2003

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THE EU DIRECTIVES

- The WEEE Directive (2002/96/EC) is an “environmental Directive” allowing member States to use the principle of subsidiarity in transposition. Nevertheless, the desire to harmonize waste management policies has played a role.
- The RoHS Directive (2002/95/EC) is a “single market Directive” aimed at providing a “level playing field” by setting the same standards across all member States.
 - Aims to eliminate hazardous materials from waste streams by prescribing that as of 1 July 2006 new EEE put on the market may not contain lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers (PBDE), with certain exceptions.

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THE EU DIRECTIVES

- The WEEE Directive is based on the principle of producer responsibility.
 - This is one of the means of encouraging the design and production of EEE in a manner that facilitates their repair, possible upgrading, reuse, disassembly and recycling.
- Importance of product design.
 - Over 80 per cent of the costs of complying with environmental requirements tend to occur at the design stage.
- Some issues still to be decided or open to interpretation.
 - Some of these may be left to the decision of member States in the process of transposition into national legislation.
- A Technical Adaptation Committee (TAC) is in charge of the amendments necessary in order to adapt the Annex to RoHS Directive to scientific and technical progress.

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OTHER EXISTING OR PROPOSED EU LEGISLATION ESTABLISHING PRODUCER RESPONSIBILITY

- The Packaging and Packaging Waste Directive.
- The End of Life Vehicles (ELV) Directive.
- Batteries and accumulators.
- Eco-design for Energy Using Products (EuP).
 - According to some, in terms of its potential impact, this is one of the most significant environmental directives proposed by the Commission.

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JAPAN

- **Basic framework laws.** This includes the Fundamental Law for the Creation of a Sound Material-Cycle Society (2000).
- **Laws for proper waste management and recycling.** This includes the Law for the Promotion and Effective Utilisation of Resources (LPEUR), which promotes 3Rs.
- **Laws for promoting specific waste recycling.** Effective 1 April 2001, the Home Appliances Recycling Law (HARL) requires the manufacturers and importers of air conditioners, televisions, electric refrigerators and electric washing machines to take back the end-of-life equipment and recycle it. Freezers were added in April 2004.
 - The scope of HARL is smaller than that of the EU Directives
- **A law for promoting greater utilisation of recycled materials.**
 - The Green Purchasing Law.

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UNITED STATES

- Federal initiatives to address EEE waste problems include voluntary programmes, multi-stakeholder initiatives and green purchasing.
- There is no federal EEE waste legislation.
- Some state and local governments are implementing legislation for managing end-of-life electronic equipment.
 - In the state of California: the Electronic Waste Recycling Act of 2003 (SB 20).
- The US Environmental Protection Agency (EPA) manages a product-stewardship website.

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CONCLUSION

- While growing volumes of waste from EEE and associated environmental and health problems are an issue of concern in many countries, policy responses have been different, in particular in the choice between government regulation, procurement policies, and private-sector initiatives to achieve environmental objectives.
- The product coverage, choice of policy instruments and stringency of measures (including with regard to threshold levels and exemptions for hazardous substances) vary widely from country to country.

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PRIVATE SECTOR INITIATIVES

- Voluntary agreement of the Japanese electronics industry to develop lead-free products
- A new Corporate Social Responsibility code for the electronics sector launched by IBM, HP and Dell in conjunction with a number of contract manufacturers on 21 October 2004.

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TRADE IN EEE

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EEE AND TOTAL EXPORTS

Four Asian Developing Countries (2003, \$ billion)					
Reporter	Electrical and electronic equipment (EEE)			Total exports	EEE as share of total exports (%)
	Total EEE	Electrical	Electronics		
China	160.9	68.5	92.4	438.2	36.7
Malaysia	56.9	11.3	45.6	105.0	54.2
Philippines	25.5	1.8	23.7	36.2	70.4
Thailand	28.2	10.8	17.4	80.3	35.1

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DEFINING THE EEE SECTOR

EEE categories Annex 1B of the EU WEEE Directive, excluding some categories not covered by RoHS. HS numbers identified by UNCTAD	Developed countries' imports from developing countries in 2003	
	US\$b	Share (%)
All	289.7	100.0
Large household appliances	13.7	4.6
Small household appliances	11.0	3.7
IT and telecommunication equipment	204.1	68.3
Consumer equipment	59.1	19.8
Other categories	10.9	3.6

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TRADE IN EEE: SOME FIGURES (US\$b)

	2003
World trade	844.6
• Of which IT equipment	602.7
Developed countries' imports	445.6
• Of which IT equipment	300.0
Developed countries' imports from developing countries (and % of their total imports)	289.7 (65.0%)
• United States	134.6
• European Union	97.9
• Japan	46.3
Developed countries' imports from China, Malaysia, Philippines and Thailand	168.0 (37.7%)

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DEVELOPED COUNTRIES' EEE IMPORTS FROM DEVELOPING COUNTRIES (US\$b)

Imports from	EEE		IT equipment	
	US\$b	Share	US\$b	Share
World	446.0	100.0%	300.0	100.0%
Developing countries	289.7	65.1%	204.1	68.0%
South-East Asia (excl. Rep of Korea)	237.1	53.2%	168.9	56.3%
Four Asian countries	168.1	37.7%	110.1	36.7%
- China	107.1	24.0%	61.5	20.5%
- Philippines	14.0	3.1%	13.2	4.4%
- Malaysia	33.4	7.5%	27.0	9.9%
- Thailand	13.5	3.0%	8.4	2.8%

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IMPLICATIONS FOR DEVELOPING COUNTRIES

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IMPACT OF ROHS DIRECTIVE

- Regulations aimed at phasing out hazardous substances are the most significant from a trade point of view.
- The case of the EEE sector illustrates how product standards to address local environmental concerns in major markets can have significant implications for processes and production methods in other countries.
- Because of globalization of international trade and investment flows, regulations in major markets have a significant impact on standards and regulations in other countries.
 - Legislation in the State of California includes provisions for hazardous materials that are based on the RoHS Directive.
 - China is also developing its own RoHS.

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IMPLICATIONS

- In order to comply with the RoHS Directive, manufacturers will have to sustain costs of redesigning manufacturing machinery, general R&D costs to find and test alternative substances, and, at least in the short or medium term, higher operating costs.
- In the domestic or EU context, the UK Department of Industry (DTI) expects that component suppliers are likely to bear the majority of costs in the short term, but that in the long term they are likely to pass on these additional costs to the assemblers and/or manufacturers.
- Requirements are transmitted to developing countries largely through the supply chain.
- SMEs could be disproportionately affected.

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FINDING SUBSTITUTES FOR RESTRICTED SUBSTANCES MAY POSE DIFFICULTIES

- Lack of institutional and financial capacity in areas such as R&D and product design.
- Insufficient bargaining power to force large suppliers to develop substitutes.
- Difficulties in finding competent suppliers and establishing cost-effective materials control programmes.
- Uncertainty about the precise implementation of regulations.
- Substitutes subject IPR protection may be expensive.
- Risk of crowding out of SMEs that face difficulties in providing product information.
- Lack of capacity to influence decision-making in importing countries.

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TNCs

- Many TNCs have developed corporate standards to assure compliance with RoHS, similar legislation in other countries and relevant industry initiatives.
- They provide information and give instructions to their subsidiaries in developing countries.
- TNC subsidiaries impose requirements on local suppliers and often provide training and/or other forms of assistance to help them comply.
- TNC standards can be more stringent than required by legislation and implemented before legislation becomes effective.

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SUPPLIER MATERIAL DECLARATIONS

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- Many customers are demanding information from suppliers to have assurance that products are in compliance with RoHS.
- This may be through supplier material declarations, a document that discloses the part per million (ppm) levels of substances in a product.
- Demands from customers vary in terms of scope, content, type and format of material disclosures.
- Some customers are applying safety margins or are requiring disclosure beyond RoHS-banned substances.

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CONSULTATIONS

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CONSULTATIONS

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- An analysis of the EU indicates that there are relatively extensive and reasonably transparent processes of multi-stakeholder consultations on environmental policies,
- However, trade implications seem to receive little attention in these processes and in regulatory impact assessments.
 - Discussions on trade issues focus on concerns about (a) the functioning of the internal market in the EU and (b) exports of EEE waste to developing countries, in particular from the US.
 - Regulatory impact assessments, where conducted, have not addressed implications for developing countries.

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BILATERAL EFFORTS

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- The EU and some member States have made efforts to assist developing countries in enhancing their understanding of the Directives
 - For example, on 29 January 2004, the delegation of the EC to Thailand and the Thai Industrial Standards Institute, with the support of the Federation of Thai Industries, organized a Seminar on "Waste management regulations: implications to electrical and electronic industries in Thailand"

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ROHS DIRECTIVE – CONSULTATIONS ON EXEMPTIONS

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- Article 5 of the RoHS Directive explicitly mentions that the Commission shall *inter alia* consult producers of EEE, recyclers, environmental and consumer organizations before any amendments to the Annex (exemptions) can be made.
- INTERNET consultations.
- In February 2005, the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China (AQSIQ) submitted a Chinese Stakeholder's Response to the third Stakeholder consultation on adaptation to scientific and technical progress under the RoHS Directive for the purpose of a possible amendment of the annex.

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ADJUSTMENT PROCESSES IN DEVELOPING COUNTRIES

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COUNTRY CASE STUDIES

China	Research team of the School of Environment and Natural Resources of Renmin University of China, led by Professor Yang Changju
The Philippines	Dr. Phares Parayno, Chair of the Environmental Studies Program of the Miriam College of Quezon City
Thailand	Research team of the Thai Electrical and Electronics Institute, led by Mr. Charuek Hengrasmee and Dr. Chirapat Popuang
	Nudjarin Ramungul, National Metal and Materials Technology Center (MTEC): Status of RoHS adjustment in Thailand
Malaysia	A. Bakar Jaafar, Siew-Hai Wong and M. Supperamaniam

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CHINA – INDUSTRY STRUCTURE

- **Large manufacturers.** Are aware of the new environmental requirements in external markets, but the implications and adjustments needed are often not well understood.
- **Foreign-owned and export-oriented enterprises.** Relatively high level of awareness. Many companies are ISO 14001 certified.
- **SMEs.** Represent the lion's part of the around 11,700 companies in the EEE sector. Little awareness of environmental issues. SMEs may not be ready to respond to RoHS requirements.

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CHINA – LEGISLATION [1]

- The Ministry of Information Industries (MII) has developed a draft regulation entitled **the Management Methods for the Prevention and Control of Pollution from Electronics Information Products.**
- MII seems to have separated the restricted substances component (“Chinese RoHS”) and the recycling component, which has been transferred to the National Development and Reform Commission (NDRC).
- The Chinese RoHS
 - Covers the same six chemicals as the EU Directive and has the same implementation date: 1 January 2006.
 - MII is working with industry on product coverage, maximum tolerated thresholds of the banned substances and for marking requirements.

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CHINA – LEGISLATION [2]

- The NDRC seems to have been given the responsibility to develop a recycling law similar to Japan's HAREL, with the same product coverage (air conditioners, refrigerators, televisions and washing machines) with the addition of computers. These categories have been chosen on the basis of being high volume and heavy weight products.

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THE EEE SECTOR IN THE PHILIPPINES

The industry has two major segments:

- The finished electronic product sector.
 - Subsidiaries of TNCs and Filipino-owned SMEs.
 - Produces mainly for the domestic market; exports are small.
- The electronic component sector.
 - Impressive performance of semiconductor manufacturing, which alone accounts for more than half the value of Philippines' total exports
 - In-house manufacturers.
 - Contract manufacturers: compete in the open market for orders for customer-designed circuits.
 - Increasing demand for their products led in-house manufacturers to outsource assembly and product testing tasks to contract-manufacturers.

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PHILIPPINES

- Currently there is little value added in exports of semiconductor devices.
 - The semiconductor industry is currently largely confined to assembly and product testing activities.
 - It has to import about 80 per cent of its inputs because local suppliers do not have the technology to meet the industry's quality requirements.
 - Most of imported inputs are supplied by the parent company.
- However, the industry is now moving toward backward integration.
 - Consequently, enhancing domestic capacity to comply with RoHS and other requirements becomes more critical.
 - Several companies have already set up R&D facilities.

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MALAYSIA

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Malaysia has relatively been less affected

- TNCs operating in Malaysia have been preparing to meet the requirements through direct communication between the TNC head offices and their respective subsidiaries in Malaysia.
- Non-TNCs are manufacturing largely for the domestic market, under their own brands.
- Even when they become local suppliers of TNCs, they are generally in a position to get the necessary technical support from the TNCs they supply.
- [Only around 15% of EEE exports go to the EU].

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THAILAND: STRUCTURE OF THE EEE INDUSTRY

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Large number of SMEs
...
and local companies

Companies	Number	Share (%)
Total	2317	100.0
SME	1898	81.9
-Small	1576	68.0
-Medium	322	13.9
Large	240	10.4
N/A	179	7.7

	Total	Foreign and joint ventures	Local
Total	2317	533 (23%)	1784 (77%)
Assemblers	1017	303 (30%)	714 (70%)
Part suppliers	1300	230 (18%)	1070 (82%)

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THAILAND: PRO-ACTIVE APPROACH

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- The Government has organized meetings with industry to enhance understanding of the EU Directives, created a high-level sub-committee and set up working groups.
- Bilateral consultations with the EC
- The National Metal and Materials Technology Center (MTEC) has established the Trace Element Analysis Lab (TEA-Lab). TEA-Lab is organized to become a contact point for companies who need technical assistances to substitute banned materials.
- The "Thai RoHS Alliance" groups manufacturers across the EEE supply chain, research institutes, testing laboratories, as well as private and government in joint efforts to enable producers in Thailand to comply with the requirements of the RoHS Directive.

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THAILAND LEGISLATION

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- The Ministry of Industry:
 - Enacted legislation to regulate the imports of used EEE.
 - Various Directives concerning EEE:
 - The Directive of Industrial Standards for Separation and Recycling Facilities for EEE and the Directive of Industrial Policies on Electrical and Electronic Products.
 - The Draft Directive on Types and Quantities of Hazardous Substances in EEE covers the same substances as the EU RoHS
- The Ministry of Natural Resources and Environment:
 - Has been developing the National Strategic Plan for the Environmentally Sound Management of EEE-waste.
 - Has been drafting a Law for the Promotion of Hazardous Waste Management, which includes EEE-waste management.

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WASTE MANAGEMENT In East and South-East Asia

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- Empirical analysis is needed on the current and potential size of national recycling, reconditioning and reuse markets as well as appropriate policies for stimulating collection, recovery, reuse and recycling of material.
- Developing countries cannot simply copy collection and recycling systems used in developed countries because of the peculiarities of supply of and demand for EEE-waste
 - The important role of the second-hand market and product refurbishing/repair.
 - SMEs play an important and cost-efficient role in collection and refurbishing/repair of EEE waste; and
 - Collection, repair, refurbishing and disassembly can offer ample business opportunities for SMEs.
- Waste management policies should not be confined on recycling/recovery, but include waste avoidance/reduction.

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COMPARISON OF NATIONAL EXPERIENCES

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China and Thailand Relatively more affected

- Relatively large number of SMEs and nationally owned companies
- Higher level of integration

- Governments have been relatively more active in promoting adjustment and implementing legislation.
- Some initiatives to address domestic post-consumer EEE waste (and imports)

Malaysia and the Philippines Relatively less affected

- Relatively large number of TNC subsidiaries
- Lower level of integration (in the Philippines most inputs are provided by the parent company)

- Governments have played a less important role
- Less progress in addressing domestic post-consumer EEE waste (left to company initiatives)

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RECOMMENDATIONS

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TO GOVERNMENTS INTRODUCING NEW STANDARDS

- Efforts should be made to disseminate information on new environmental requirements and to identify, as early as possible, the implications for developing countries.
- There is a need for manuals explaining the implications of new environmental regulations for developing countries as well as available technical cooperation/capacity building programmes to assist them in meeting new requirements and implementing domestic standards.
- In their stakeholder consultations and regulatory impact assessments, developed countries need to address the implications for developing countries, especially SMEs.
- Developed countries should be proactive in facilitating the participation of developing countries in consultations.
- Flanking policies should address constraints of and offering opportunities for developing countries.

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TO DEVELOPING COUNTRIES

- Design proactive adjustment policies, paying special attention to the conditions and needs of SMEs.
- Participate in further consultations on RoHS (as China did).
- Define and improve the use of national product standards.
- Implement cost-effective eco-design programmes.
- Explore early-warning mechanisms, at national level and, where appropriate, at sub-regional and easy access to information on new environmental requirements. Assess the likely impacts and adjustments to be made.
- Strengthen environmental management systems. ISO 14001 registrations should pay more attention to product-related aspects.
- Promote national EEE-waste management, including the control of imports of second-hand equipment.

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Thank you

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