



推广节能及气候友好型空调

Leapfrogging to Energy-Efficient and Climate Friendly Air Conditioners

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United for Efficiency Initiative (U4E)

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INTRODUCTION OF U4E 简介



能效设备联盟（U4E）是一项全球计划，旨在支持各国向节能照明，电器和设备过渡。U4E由环境署牵头，民间社会，企业，区域和国际组织以及金融机构等一系列合作伙伴参与，共同致力于提高效率。

United for Efficiency (U4E) is a global initiative led to supports countries in transitioning to energy-efficient lighting, appliances and equipment. U4E is led by UNEP and involves a range of partners from civil society, the private sector, regional and international organisations and financial institutions that together aim to improve efficiency.

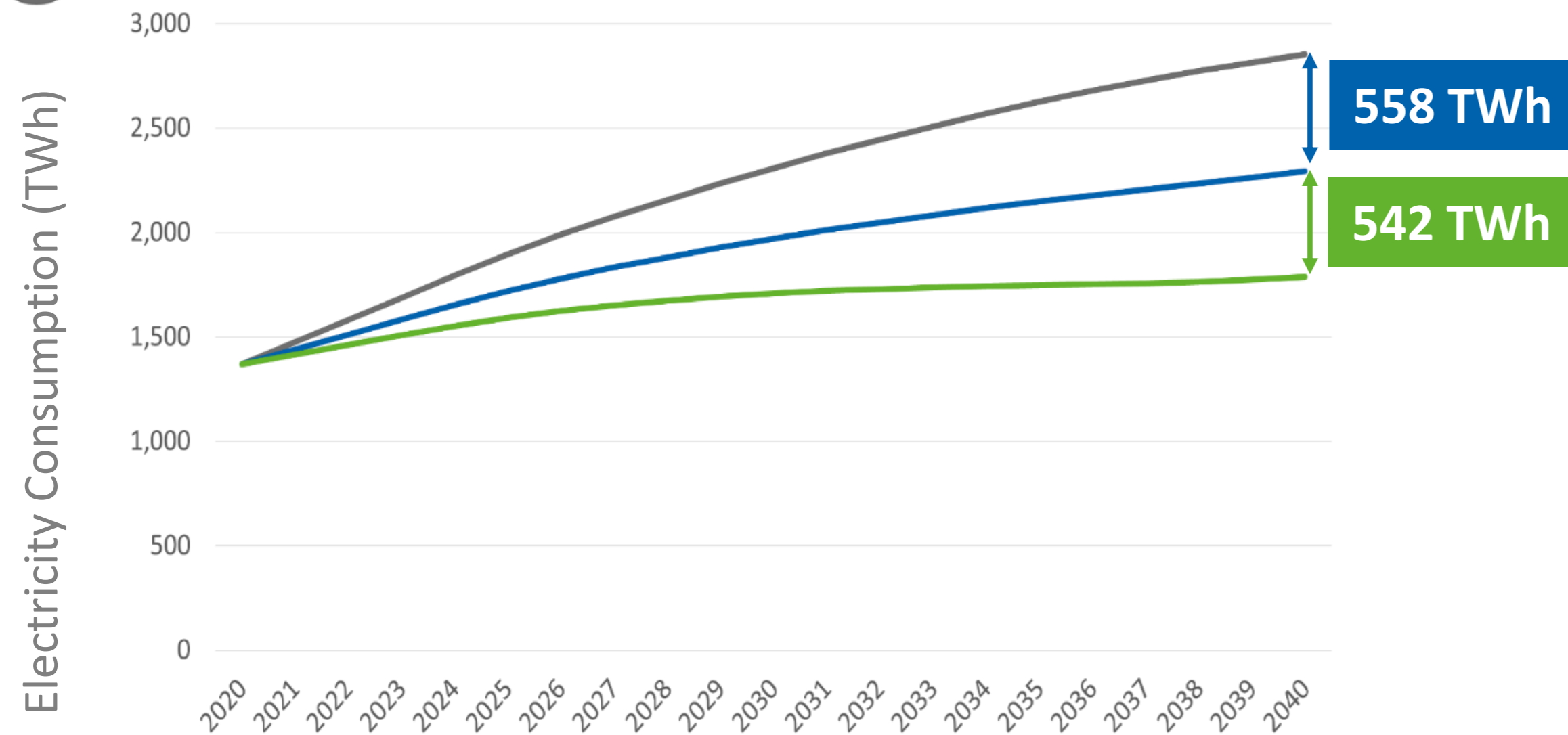


Country Savings Assessments

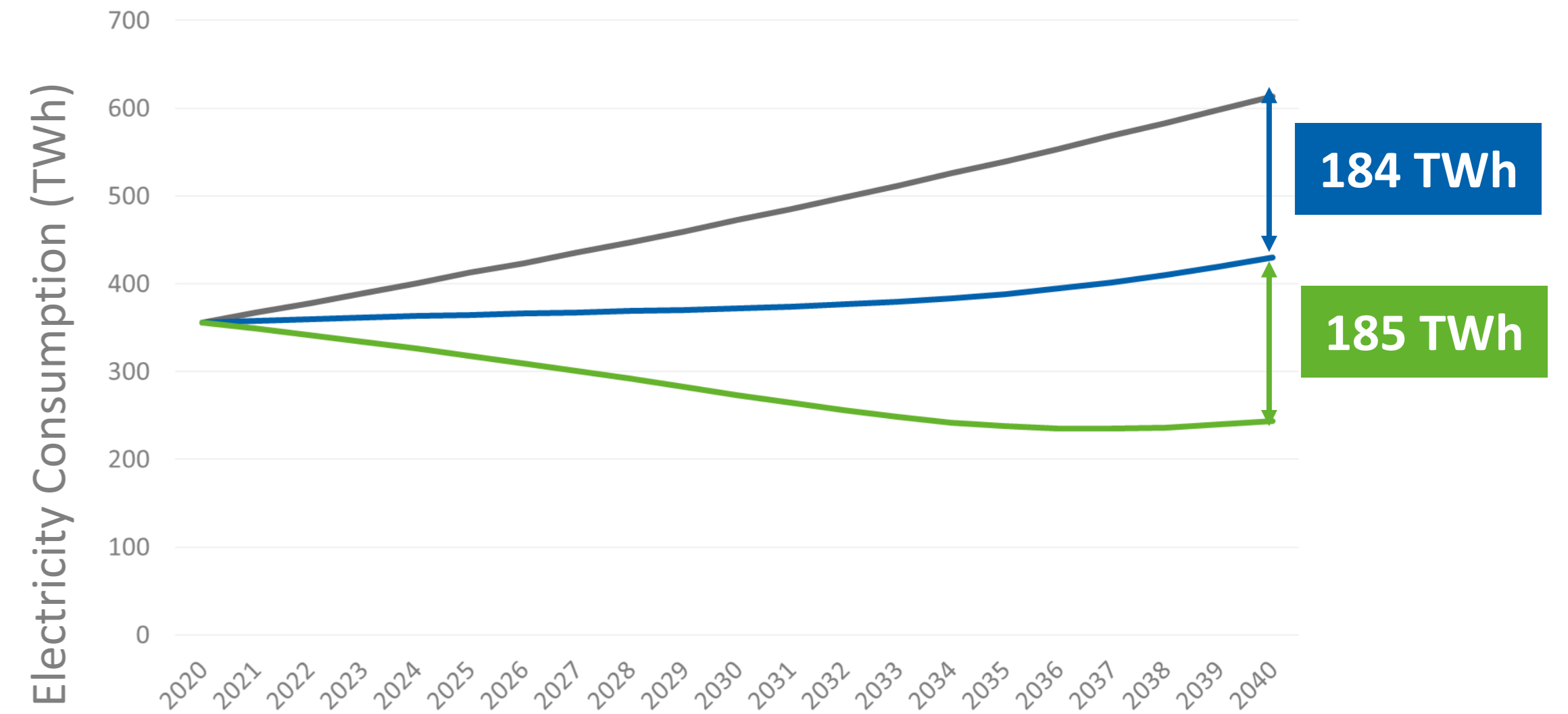
Savings potential of room ACs and residential refrigerators by 2040*



Room ACs



Residential refrigerators



Electricity consumption growth by 2040

Scenario	Room ACs (%)	Residential Refrigerators (%)
Business As Usual Scenario (BAU)	108 %	72%
With Minimum Ambition Scenario (MEPS)	68%	21%
With High Ambition Scenario (HEPS)	31%	(31%)

Annual Savings in 2040**

Category	Room ACs	Residential Refrigerators
Electricity Savings (TWh)	558	184
<i>equivalent to:</i>		
Power Stations [500 MW]	255	84
Millions of CO ₂	516	155
billions of USD in electricity bills	51	17

- Business As Usual Scenario
- Minimum Ambition Scenario
- High Ambition Scenario

* Graph refers to the 156 developing countries and emerging economies that had been assessed for the U4E Country Saving Assessments.

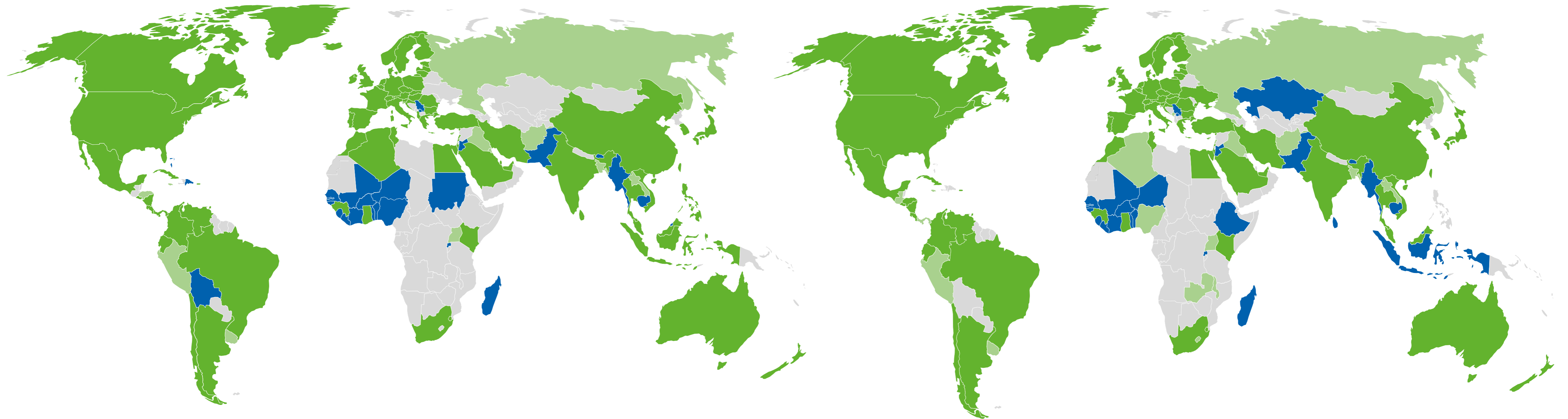


Policy gaps exist on MEPS and labelling

世界范围内最低能效标准和能效标识的采用水平不一

Room ACs 房间空调器

Residential Refrigerator 家用冰箱



 强制性
Mandatory

 正在更新
New Development

 自愿
Voluntary

 暂无数据
No Data Found

Yet many are: 即使有强制性标准，很多

- 已经过时 Out of date,
- 没有有效地执行 unenforced
- 作弊现象仍存在 circumvented,
- 严格程度不同 Varying in stringency

U4E APPROACH FOR MARKET TRANSITION

帮助国家推动产品能效提升和市场转型的渠道



帮助国家了解市场，抓住机遇，明确优先事项
Understand the market, the opportunities, benefits and priorities

提高意识和能力建设
Raise awareness and capacity



设定测试范围和测试方法
Set scope & definitions, exemptions, test methods

建立能效标准限值淘汰低能效的产品

Establish MEPS to ban the worst products

启用能效标识以帮助购买者了解产品能效优势

Deploy Labels to help buyers understand energy efficiency benefits



加强市场准入监管，并测试产品以确保合规

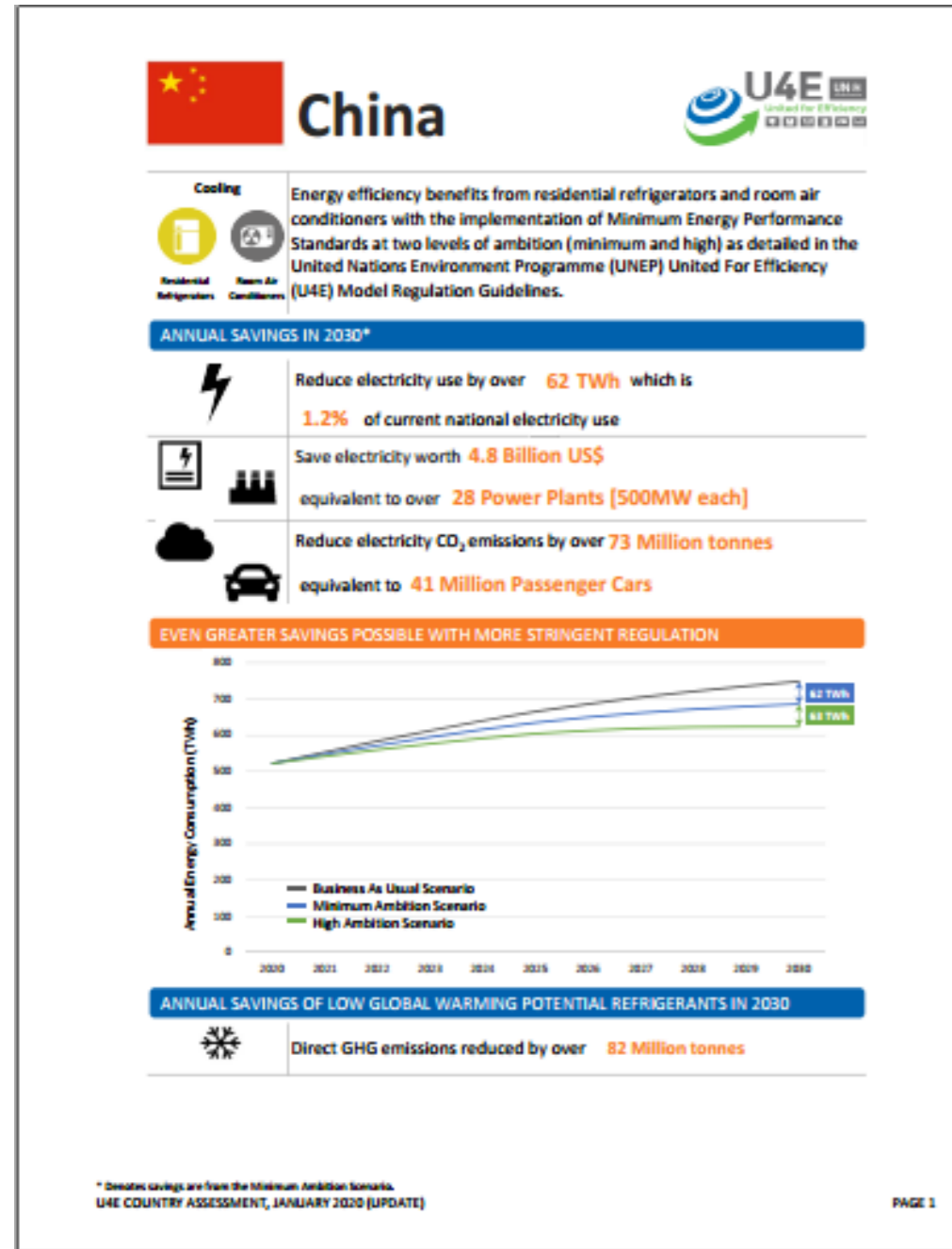
Monitor what enters the market and test to Verify compliance and enforcement of rules



制定财政激励措施，支持高能效产品的购买

Create financial incentives support adoption of the best products

156份国家评估 country assessments



能效标准指南 Model Regulation Guidelines

联合国环境规划署
空调政策指南补充：
《在全球加速普及节能环保型空调》

能效标准
2019年9月

节能环保型空调

U4E UN
KIGALI
gef

联合国环境规划署 - 全球环境设备 | 能效联盟

产品注册系统和软件开发规范 Prototype product Registration System and specifications for software development

U4E UN
Sample Product Registration Form - Refrigerators

Home > Registration Application Form - Refrigerators Record ID: P10001022

Test Details

Form Navigation

- Applicant Details
- Product Details
- Test Details
- Performance Claims
- File Uploads
- Declaration and Fees

Testing Details

Test method*

Test laboratory* [Add Another Laboratory](#)

Test laboratory accreditation*

Test Report or CAR [Add >](#)

Test Report/Certificate Number/s

Test Report Date/s

Serial Number of Test Unit/s

Test Results

Adjusted volume (AV)* litres

24-hour energy consumption (SDC)* Wh/24hours

24-hour energy consumption (SDC)* Wh/24hours

Weighted energy consumption* Wh/24hours

Annual energy consumption* kWh/year

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An Initiative of UNEP

财政激励机制 Financial Mechanism

BASE UN environment gef U4E UN

Report by BASE - Basel Agency for Sustainable Energy for UN Environment

MANUAL OF FINANCING MECHANISMS AND BUSINESS MODELS FOR ENERGY EFFICIENCY

March 2019

RESOURCES 协助市场转型的可用资源 READY





空调能效标准指南和支持信息 MODEL REGULATION GUIDELINES & SUPPORTING DOCUMENT FOR ACs

- 作为指导方针来帮助发展中国家和新兴经济体的监管机构和决策者。 Intended as a guideline to help **inform regulatory authorities and policy makers** in developing and emerging economies.
- 设置**最低能效限值**，以淘汰将来从市场上销售低效产品。 Sets a **minimum efficiency floor** to prohibit future sales of inefficient products from the market.

提供英语、西班牙语、中文版本，法语和阿拉伯语版本即将上线
Available in English Spanish, and Chinese. French and Arabic versions are coming soon.

链接: <https://united4efficiency.org/resources/model-regulation-guidelines-for-energy-efficient-and-climate-friendly-air-conditioners/>



能效标准指南 MODEL REGULATION GUIDELINES *



产品范围和类别
Model Regulation
Guideline Scope and
Product Categories**



最低能效标准和产品标识
MEPS & Performance
labelling



测试方法
Test method



制冷剂和泡沫发泡剂规定
Refrigerant and foam
blowing agent regulations

支持信息文件中的 补充内容

ADDITIONAL INFORMATION IN THE SUPPORTING DOCUMENTS



标准指南对标
Benchmarking the Model
Regulation Guidelines



能效性能要求示例
Example of Energy-Efficiency
Performance Requirements



节能空调市场供应状况与认可度
Market Availability and Recognition
of Energy Efficient AC Systems



产品可用性和成本考量
Considerations of Product
Availability and Cost

* 示范标准指南不包括产品注册、试验室认证程序；监督、验证和执行程序 Model Regs does not include product registry, lab certification procedures; Monitoring, verification & enforcement procedures

** 无风管分体式、独立式、便携式和可逆式热泵 non-ducted single split, self-contained, portable and reversible heat pumps



STAKEHOLDERS ENGAGED 参与方

60+ Expert Reviewers! 60余位专家参与审阅

资助机构 FUNDERS



全球制造商和行业协会 GLOBAL MANUFACTURERS & INDUSTRY ASSOCIATIONS



技术组织 TECHNICAL ORGANISATIONS



区域政府间组织 REGIONAL INTERGOVERNMENTAL ORGANISATIONS



National Project – Rwanda (RCOOL & RCOOL FI) 卢旺达制冷项目

Main components 项目内容

- Conduct **Market Assessment** 进行市场评估
- Draft a **National Cooling Strategy** and facilitate **MEPS** and **Labels** adoption
起草国家制冷战略，促进 最低能效标准和能效标识的采用
- Develop financial mechanisms - **Coollease** (commercial) and **on-utility bill financing** (residential)
在制冷产品的商用和民用领域开发金融财务机制
- Develop and implement **Communication Campaign** 国家层面大型宣传活动提高公民意识
- Create a **toolkit** on Rwanda's approach and provide **capacity building** in EAC 将卢旺达的经验分享给东非共同体，并提供能力建设

Recent achievements 近期

- **National Cooling Strategy** adopted by Cabinet – implementation underway
国家制冷战略被内阁采纳并正在有效实施
- **Financial mechanisms** near-ready for implementation 财务机制已接近实施阶段
- **MEPS** and **Labels** anticipated for entry into force in 2021 最低能效标准和能效标识将于2021年生效
- **Communication Campaign** developed and will be launched soon 国家层面大型宣传活动即将展开



Q2 2018

–

Q1 2021

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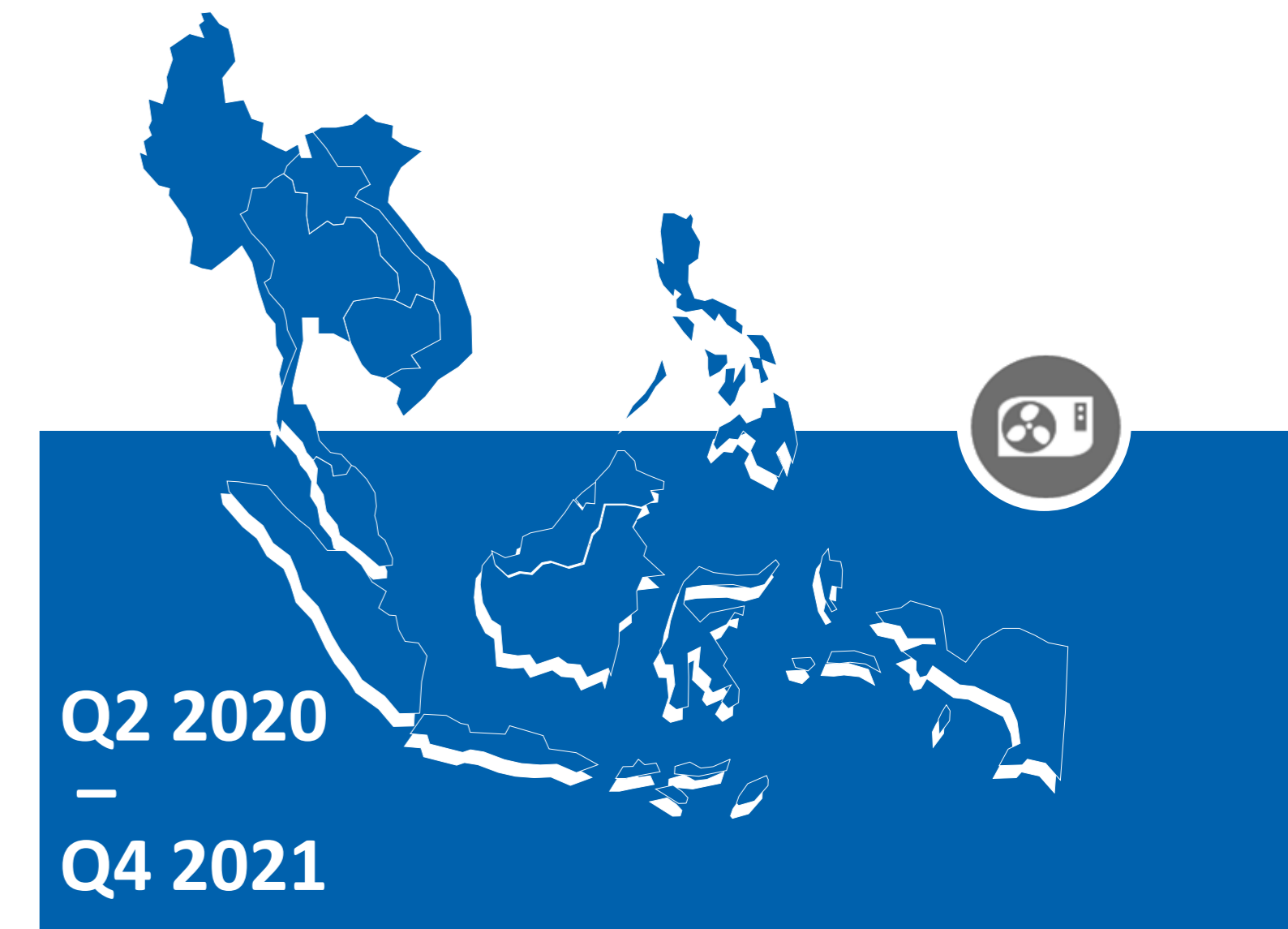
Regional Project – ASEAN - Air Conditioners 东南亚区域空调项目

Main components 项目内容

- **Technical documents** recommending adoption of common evaluation method of air conditioners by ASEAN Member States
起草相关技术文件以帮助东南亚联盟成员国采用空调通用评价方法
- Update **ASEAN Regional Policy Roadmap** and **National Policy Roadmap** on Higher Efficiency Room Air Conditioners
更新东南亚联盟区域及国家高能效房间空调器政策方针
- Provide **technical recommendation** on adoption of harmonized evaluation standards.
为区域采用统一产品评价标准提供技术建议

Recent achievements 近期

- Convened inception of **Project Steering Committee, Policy Working Groups** and **Technical Working Groups** 召开项目指导委员会,政策工作组以及技术工作组会议



Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam

文莱、柬埔寨、印度尼西亚、老挝、马来西亚、缅甸、菲律宾、新加坡、泰国、越南

Donors:
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Conclusions 结论

- 最低能效标准和标识应尽可能的减少新生产的空调所造成的能源浪费和污染 MEPs and labels needed to minimize growth in energy use and pollution caused by new A/Cs
- 兼顾制冷剂和能效要求 Address the refrigerant and efficiency simultaneously
- 不同国家间能效标准的统一有利于消费者、制造商和政府的利益 Harmonize across countries benefits consumers, manufacturers, and governments
- 市场上已存在符合标准要求的产品 Compliant products are already on the market
- 更高效的产品对消费者更具成本效益(节省的电费远超过增加的成本) More efficient models are cost-effective for consumers (utility bill savings can far exceed incremental cost)

U4E Model Regulations Make it Easy!
U4E能效标准提供了简单有效的解决方式！



Let's help the world meet tomorrow's
energy needs by leapfrogging to
Efficient Cooling today

让我们用今日的高效制冷帮助世界满足明日的能源需求



TRANSFORMING MARKETS TO ENERGY-EFFICIENT PRODUCTS



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