BUILD_ME

NATIONAL KICK-OFF WORKSHOP: EGYPT

ACCELERATING 0-EMISSION BUILDING SECTOR AMBITIONS IN THE MENA REGION PROJECT (BUILD_ME)

3 MARCH 2020

Supported by:

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

based on a decision of the German Bundestag

INTERNATIONAL CLIMATE INITIATIVE (IKI)

HBRC

IDG MATRIX Integrated Development Group

NAVIGANT A Guidehouse Company

BUILD_ME PROJECT INSIGHTS

PHASE I

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SCOPE

Original Project

2016 - 2018

- Extensive analysis and research
- Identification of barriers
- Recommendations

Project Extension

2019 – 2021

- Implementation of recommendations
- Dissemination of results
- Upscaling and consistency

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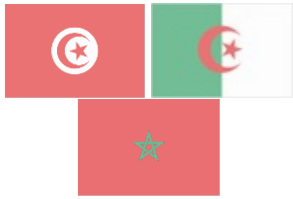
PHASE I [2016-2018] IN A NUTSHELL

Countries



Partners + Client

الجمعيّة العلميّة الملكيّة
Royal Scientific Society

HBRC
المركز القومي لبحوث الإسكان والبناء

IDG MATRIX

LCEC
LEBANESE CENTER FOR ENERGY CONSERVATION
المركز اللبناني لحفظ الطاقة

Supported by:
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Objectives

- Prepare **macroeconomic analysis** focusing on the energy sector overview
- Manage a **policy dialogue** with the concerned stakeholders to improve the political framework for EE in the building sector.
- Support **pilot projects** to increase use of EE heating and cooling systems in new multi-family buildings.

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PHASE I: KEY ACTIVITIES

BUILDING ENERGY EFFICIENCY

PILOT PROJECTS

- Two pilot projects per country

Aqaba: Master plan

Zarqa: MFH for orphans

Bhamdoun: MFH

Byblos: Chalet style

Nabta Town: Master plan

Porto Pyramids, Eight large MFH

POLICY RECOMMENDATIONS & STAKEHOLDER ANALYSIS

- > 150 structured interviews with stakeholder groups
- Market analysis with >4000 questionnaires
- Policy recommendations as fact sheets discussed at roundtables

DISSEMINATION AND CAPACITY BUILDING

- Workshops and roundtables
- Regional final workshop (>100 participants) in Beirut
- Technical trainings
- www.buildings-mena.com

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PHASE I: KEY FINDINGS / RECOMMENDATIONS

Policy and decision makers

- Update/develop **Building Codes** and improve their enforcement
- Formulate benchmarks and develop a **classification scheme**
- Lack of **quantified (GHG) saving potentials** for the building sector in policy strategies

Financial institutes (FI)

- **Capacity building FI** staff: Improve the knowledge on energy efficiency
- Facilitate process to check **fulfillment of eligibility criteria**
- Merchandise **financing option for building EE** measures and incorporate in your portfolio

Project developer

- **Low cost packages** in average can already **save 30%** of energy costs.
- Investments of „nZEB variants“ **only 10-15% higher** than baseline
- **End users** are often responsible for **purchasing HVAC technologies**, separately from apartment

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BUILD_ME PROJECT INSIGHTS

PHASE II

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MAIN OBJECTIVES OF EXTENSION

1. Conception of an **EE building classification scheme** to **facilitate financing** for EE projects

2. Implementation of energy efficient buildings (**Pilot projects**)

3. Support the **policy framework** (NDCs, NEEAPs, EEBCs)

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PROJECT CONSORTIUM

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ALCOR
Développeur d'avenir durable

TRACK 0

NERC
National Energy Research Center

HBRC
المركز القومي لبحوث الإسكان والبناء

IDG MATRIX

EGYPT GBC
EGYPT GREEN BUILDING COUNCIL

JORDAN GBC
المجلس الأردني للأبنية الخضراء
Jordan Green Building Council

LGBC
lebanon green building council
مجلس لبنان للأبنية الخضراء

RCREEE
Regional Center for Renewable Energy and Energy Efficiency
المركز الإقليمي للطاقة المتجددة وكفاءة الطاقة

Freelancers

European Bank
for Reconstruction and Development

Project's New Partners

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WORK PACKAGES

WP1: **Preparatory Steps for Implementation**

WP2: **Support the Implementation of Pilot Projects**

WP3: **Framework Conditions to Increase the Energy Efficiency in the Building Sector**

WP4: **Capacity Building and Dissemination**

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PREPARATORY STEPS FOR IMPLEMENTATION

Development of a software tool → Development of a MENA building typology → Definition of building baselines & energy benchmarks

Development of a software tool

- Energy performance of buildings
- Certification of energy efficiency measures
- Global Cost Calculation

Development of a MENA building typology

Better understanding of building habits and categorization in building types

Definition of building baselines & energy benchmarks

Transparent overview of energy consumption patterns of selected building types

Source Icons: Flaticons.com

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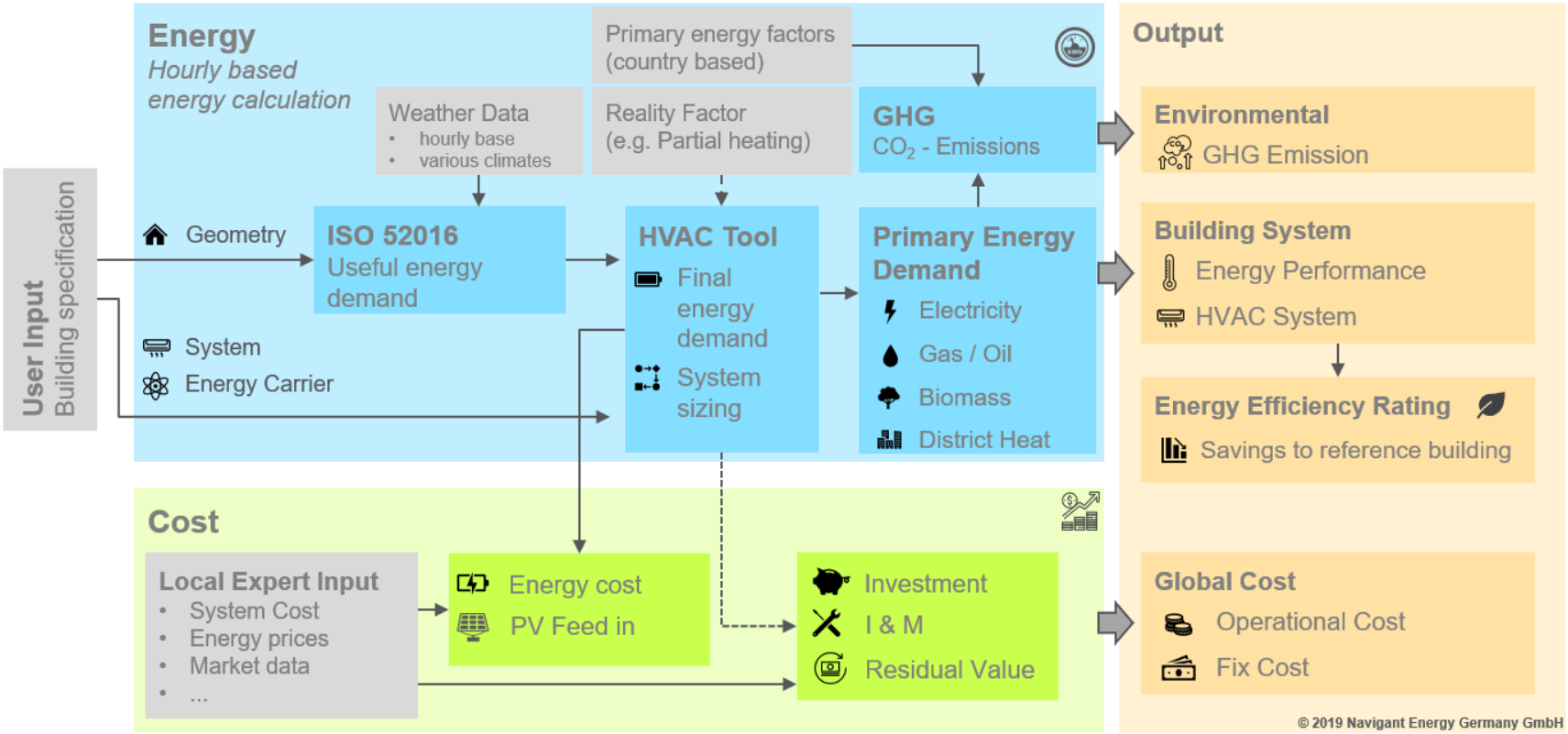
ENERGY & GLOBAL COST TOOL

Development of a software tool → Development of a MENA building typology → Building baselines & energy benchmarks



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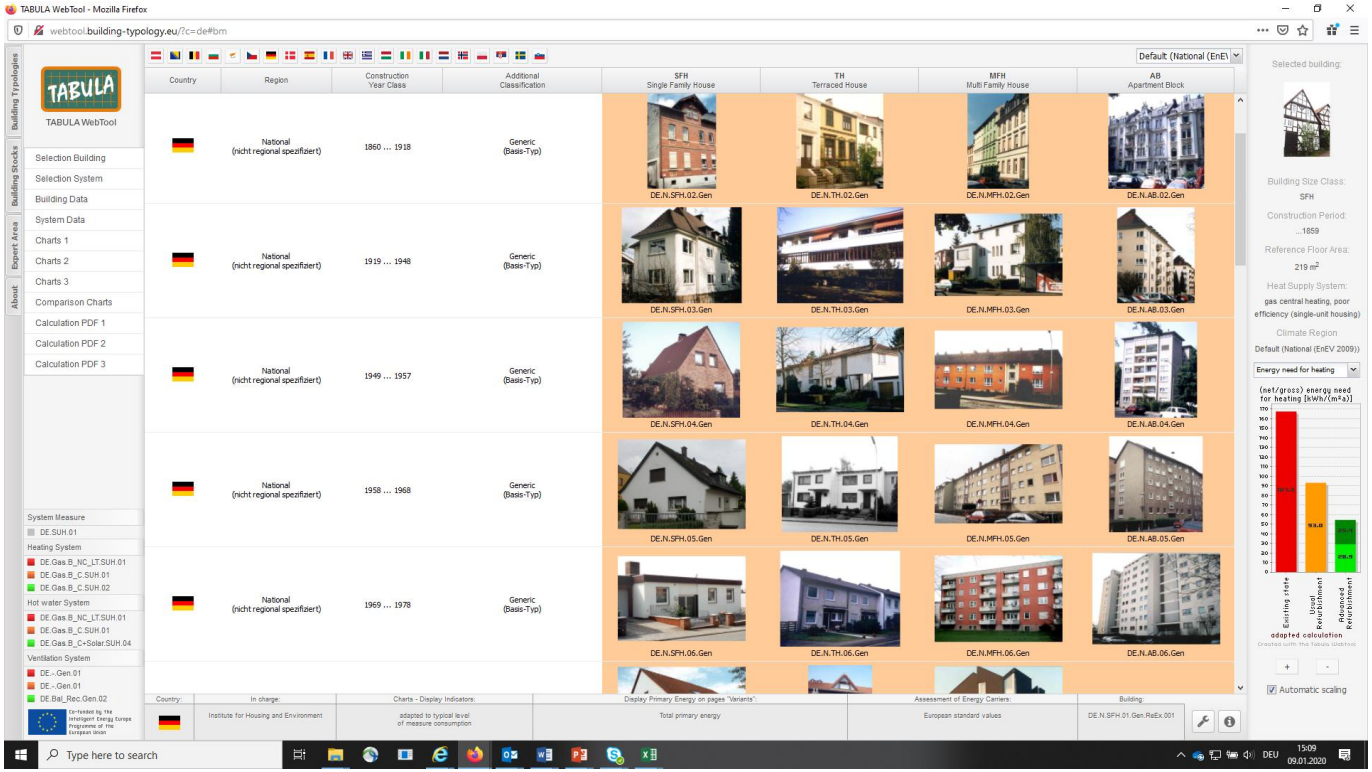
DEVELOPMENT OF A MENA BUILDING TYPOLOGY

Development of a software tool → **Development of a MENA building typology** → Building baselines & energy benchmarks



webtool.building-typology.eu/?c=de#bm

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DEFINITION OF BUILDING BASELINES AND BENCHMARKS

Development of a software tool → Development of a MENA building typology → **Building baselines & energy benchmarks**

General Information | Input | Results | Overview

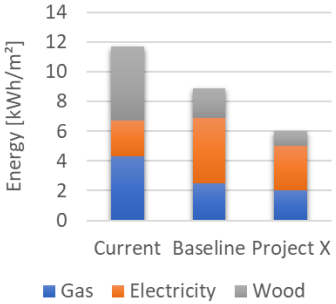
Heating: 112.4 kWh/m² | Cooling: 112.4 kWh/m² | Total: 112.4 kWh/m²

Energy

Energy Rating: D

EBRD | Bank 2 | Bank 3

Primary energy demand



	Current	Baseline	Delta
Unit	kWh/m²	kWh/m²	kWh/m²
Total	**85.4**	**68.0**	**+ 17.4**
Useful heating	55.0	40.0	+ 15.0
Final heating	62.4	44.2	+ 18.2
Useful cooling	36.1	40.0	[illegible]
Final cooling	14.2	[illegible]	- 0.8
Hot Water	8.8	8.8	0.0

Financial

Local | EUR

Global Cost

	Current	Baseline	Delta
Global Cost	**9,500 €**	**8,000 €**	**+ 1,500 €**
Investment Cost	4,000 €	4,500 €	- 500 €
Energy Cost	5,000 €	3,000 €	+ 2,000 €
I & M	2,000 €	1,000 €	- 1,000 €
Residual Value	-1,000 €	0 €	+ 1,000 €
PV Feed in	-500 €	-500 €	0 €

Save Project | Export results

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Draft version for web site

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WP2: PILOT PROJECTS

OBJECTIVES

- Demonstrate technical and financial feasibility of energy efficient buildings
- Better understand the barriers of implementing energy efficient building
- Communicate the lessons learnt with policy dialogue
- Test the newly developed classification scheme
- Provide training(s) for the staff implementing EE/RE measures

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BENEFITS FOR PROJECT DEVELOPER

Free technical assistance

- Economic assessment including cost-benefit analysis
- (Optional) Dynamic thermal simulation
- Support the implementation, on-site checks

Potential financial support

- Calculation of economic performance
- Support with application to funds
- Partnering with EBRD: offering loans and grants

Enhance your projects visibility

- Market your project as green building
- Disseminate your project via BUILD_ME website and regional conference
- Share your experiences with other developers from the region

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EXPECTED RESULTS

Case study 1: office building

Location: Sharm El Sheikh, EGY

Building Type: Existing Office Building

Energy specification:

- Reduce cooling energy demand, shading and reflective coating
- Solar cooling with absorption chiller

Case study 2: new multi-family house

Location: Ramallah, Palestine

Building Type: Multi-family house

Energy specification:

- Thermal insulation, double glazing, solar thermal collectors
- Ground source heat pump
- Award: Energy Globe

Case study 3: Hospital

Location: Zgharta, LEB

Building Type: Existing hospital

Energy specification:

- EE lighting, thermal insulation on the roof, building management system

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ENERGY EFFICIENCY IN BUILDING CODES, NDC, STRATEGIES

Starting situation

- Building code update ongoing
- Second NDC due by COP in November
- NEEAP to be updated

Goal in Phase 2

- Support the improvement of the **building code** and national / municipal **efficiency strategies**
- Support the inclusion of ambitious buildings EE into **NDC**

Our activities

- Report for building code improvement
- Report and workshop on national or municipal efficiency strategies
- Workshop on buildings EE in NDCs
- Assist political stakeholders with ad hoc support

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VOLUNTARY EE CLASSIFICATION SCHEME

Starting situation

Lack of buildings efficiency classification that is easy-to-use, Jordan-specific and accepted by international donors

Goal in Phase 2

Create a simple classification system that can be filled online

Our activities

- List and evaluate existing schemes in the region
- Engage development banks to identify needs
- Develop classification scheme, continuously discuss with local stakeholders in workshops

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ACCESS TO ENERGY EFFICIENCY FINANCING

Starting situation

Funds by development banks not used sufficiently

Goal in Phase 2

Increase the uptake of energy efficiency financing vehicles

Our activities

- Engage stakeholders to deepen understanding on barriers and develop workable solutions
- Publish guidelines for simple, transparent and effective energy efficiency financing
- Conduct train-the-trainer sessions
- Conduct trainings for project developers and local banks

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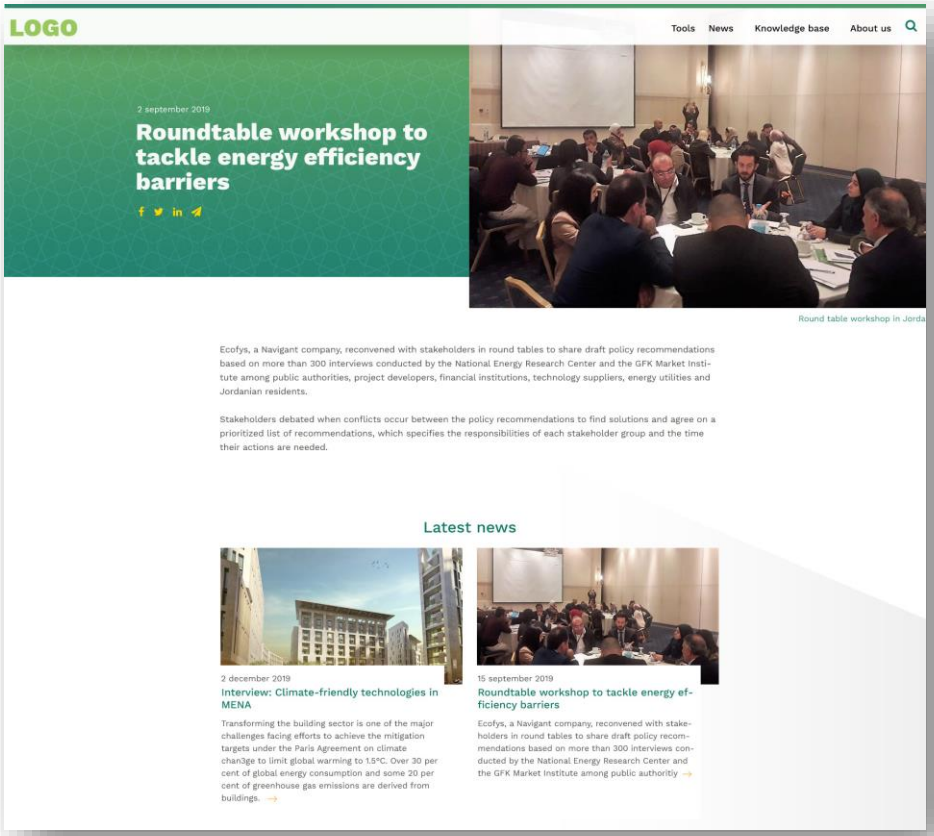
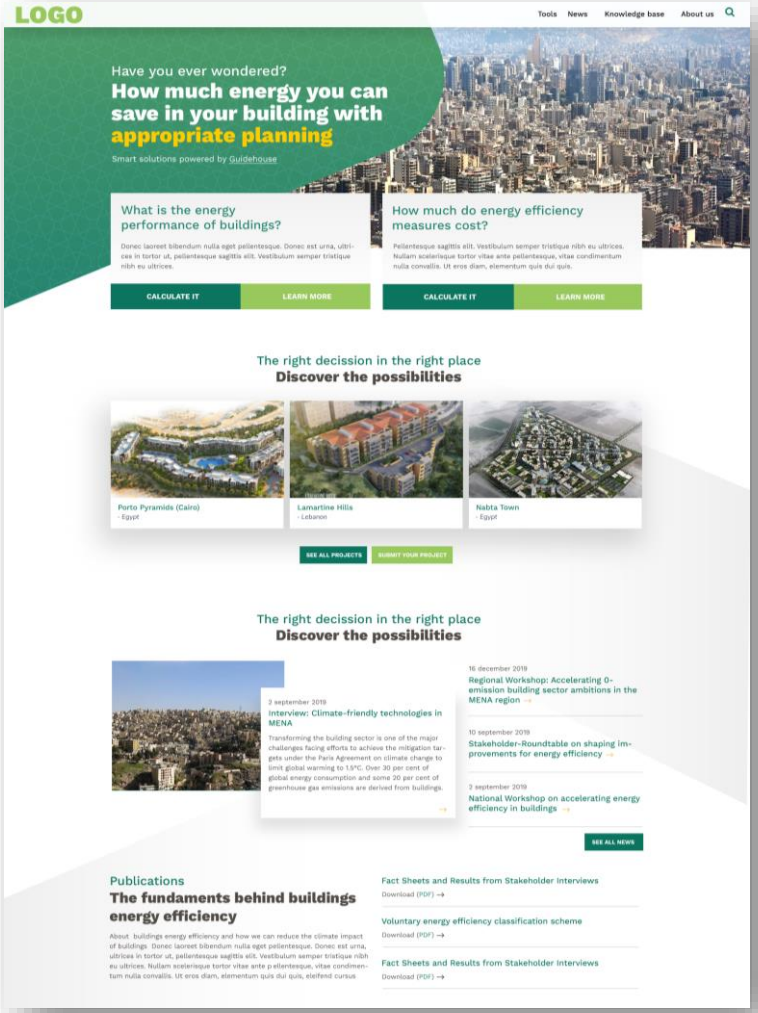
NEW PROJECT WEBSITE





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NATIONAL AND REGIONAL WORKSHOPS

Starting situation

The project requires a platform to collect input from local stakeholders and present the tools to be used in the region.

Goal in Phase 2

- Obtaining input from stakeholders on their needs and perspectives
- Present the BUILD_ME project and its results to local stakeholders

Our activities

- National kick-off workshops (today!) to continue in Q1
- Second round of national workshops to discuss preliminary results
- Regional workshop in Q4

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