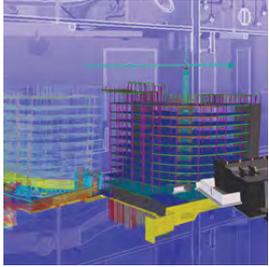


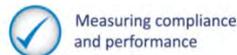
Making buildings better



Global trends & challenges in Cooling Opportunities in emerging countries?



Anette Meyer Holley
World Bank
November
2018



- Brief Introduction to BSRIA
- Global market trends and challenges in AC
- Focus on trends in emerging markets
- Future Growth areas
- Sum up

BSRIA

- Consultancy, Test, Compliance and Research
- Promotes best practices in building
- Est. 1955, 800+ members
- Non-profit association

WMI

- Over 30 years of Market Intelligence
- Independent, authoritative studies
- Unrivalled technical expertise
- Research in 90+ countries



Building Services Research & Information Association



Improving the built environment



Delivering knowledge



Measuring compliance and performance



International

Construction Compliance

- Airtightness
- Sound insulation testing
- Thermal Imaging of Building Fabric
- Ventilation Testing

Information & Membership

- Technical publications
- Training
- Membership

Test

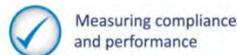
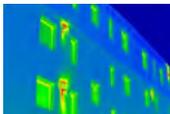
- Standard testing
- Bespoke testing
- Witness and on-site testing
- Product development, research and troubleshooting

Instrumentation

- Hire, Sales and Calibration of test and measurement instruments

World Market Intelligence

- Market Briefings
- Market Reports
- Private Client Research
- Market Consultancy



The spread of AC in Europe has pushed down heat-related deaths by a factor of ten since 2003

The Economist



1.1 billion people at risk of lack of cooling globally

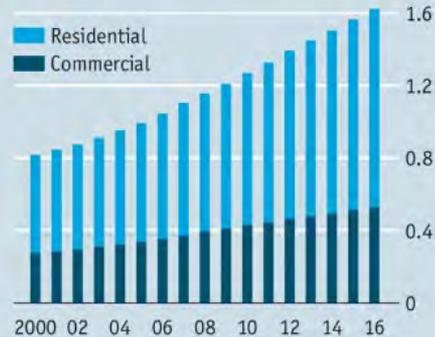
CHILLING PROSPECTS:

PROVIDING SUSTAINABLE COOLING FOR ALL
EXECUTIVE SUMMARY



In the next ten years, as many air-conditioners will be installed around the world as were put in between 1902 and 2005

World, air-conditioning units, bn



Source: International Energy Agency

From Miami to Shanghai: 3C of warming will leave world cities below sea level

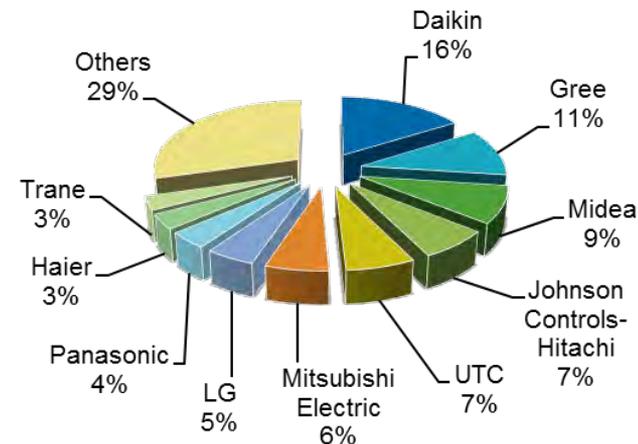


▲ South Beach, Miami, would be mostly underwater. Photograph: Nikolay Lamm/Courtesy Climate Central



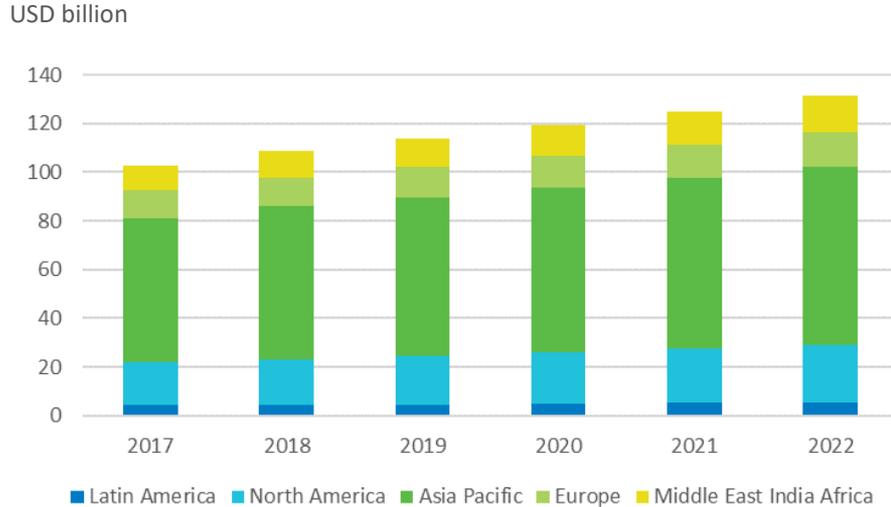
Ranking	Country	Trend	Market Value USD million	Market growth % 17-18
1	China	↑	37,920	+ 10%
2	USA	→	17,740	+ 7%
3	Japan	↓	13,910	- 1%
4	South Korea	↓	2,980	- 5%
5	India	→	2,830	+ 9%
6	Australia	→	1,720	+ 4%
7	Italy	↑	1,620	+ 12%
8	Brazil	→	1,220	+ 5%
9	Saudi Arabia	↓	1,210	- 5%
10	France	↑	1,170	+ 11%

Global AC Market Shares 2017



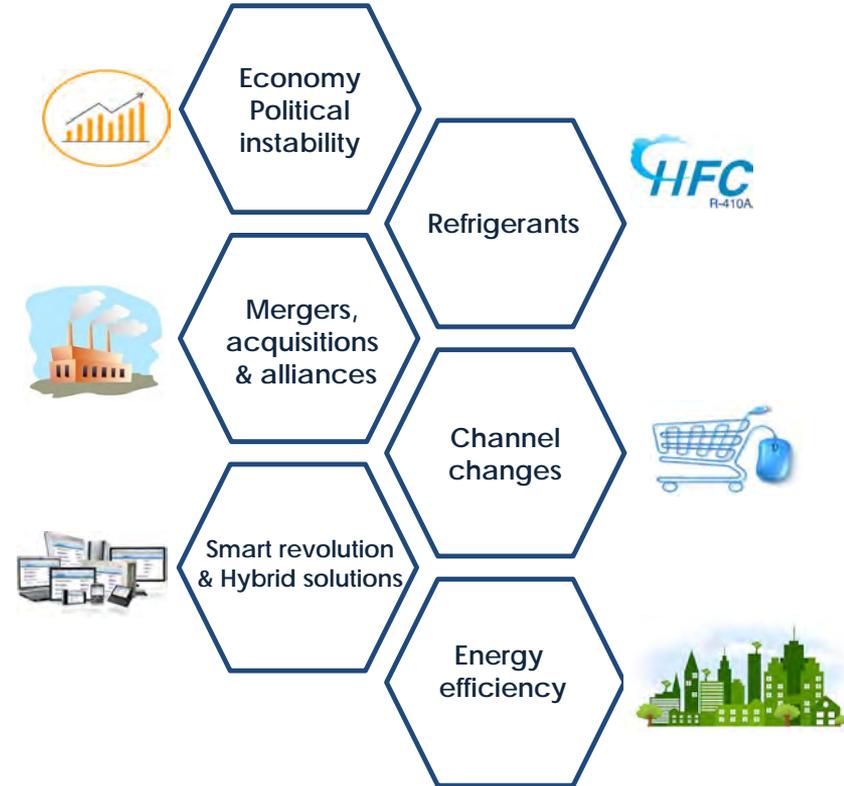
Source: BSRIA

World Air Conditioning Market, 2017 to 2022 (F)



Total Units in 2018e:
145 million
CAGR 3.9%

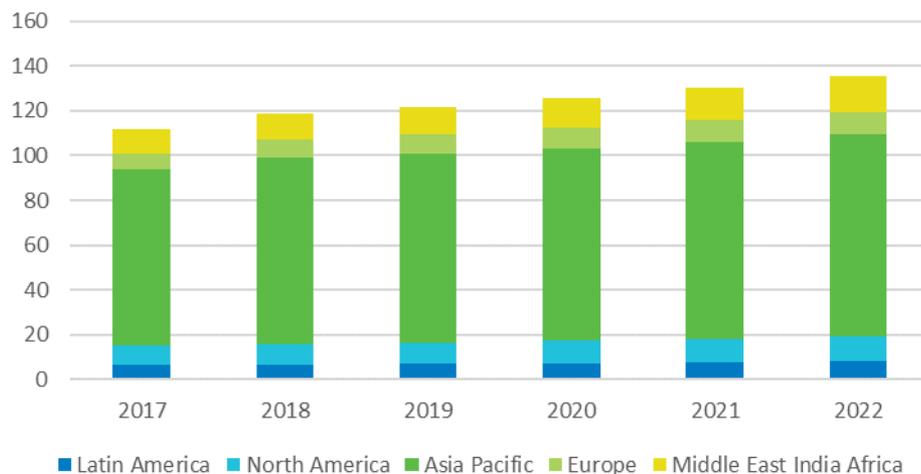
Total Value in 2018e:
USD 109 billion
CAGR 5.0%



Source: BSRIA

World Market for Single splits, from 2017 to 2022 (F)

Million units



Source: BSRIA

- 6% growth in 2018
- Splits account for 80 % of global volume sales
- Unpredictable sales
- Asia is the sales and production hub – 86% of global total
- Rapid rise in R32 refrigerants
- MEA and Europe growing fastest



USD 68.8 billion in 2018(e)
Market Value



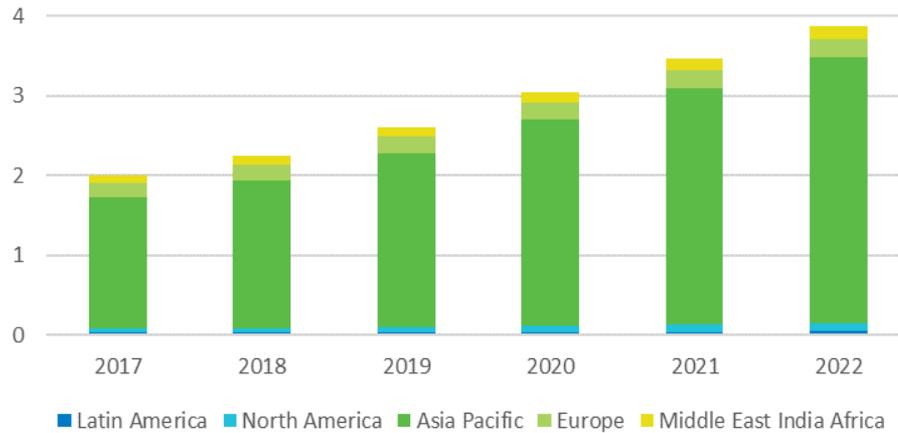
CAGR (2017-2022)
3.9% Vol



116.5 million in 2018(e)
Market volume

World Market for VRF, outdoor units from 2017 to 2022 (F)

Million units



Source: BSRIA

- 13% growth in 2018(e)
- European market maturing
- Rapid development in the Americas
- Early days in the MEA
- Rapid success of mini-VRF for residential applications
- Competes with Unitary, Chillers and BACs



USD 12.8 billion in 2018(e)
Market Value

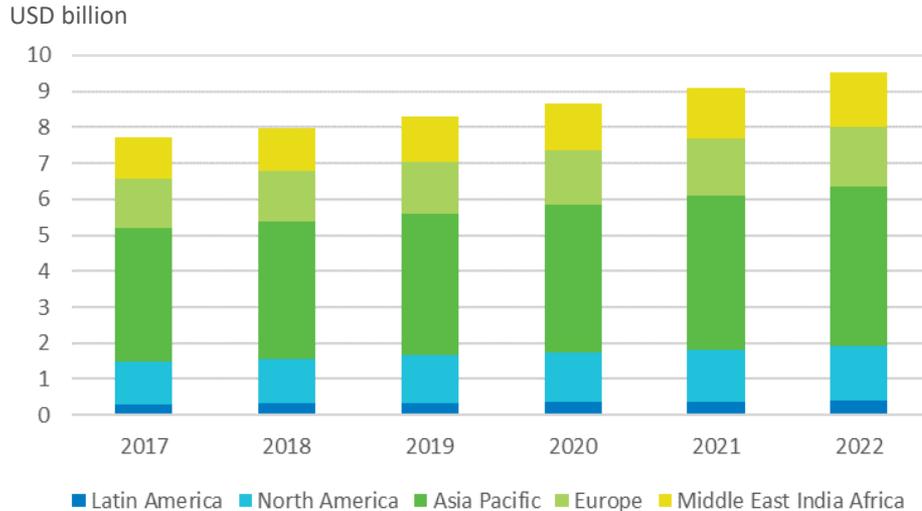


CAGR (2017-2022)
9.0% volume



2.3 million in 2018(e)
Market volume

World Market for Chillers, USD million from 2017 to 2022 (F)



Source: BSRIA

- 3% growth in 2018(e)
- US/China dominate with 45% of global sales
- Growth Inverter & reversible chillers
- Increase in capacities of compressors
- Rising demand centrifugal chillers
- Rise in modular chillers
- IP enabled chillers becoming the norm



USD 8 billion in 2018(e)
Market Value



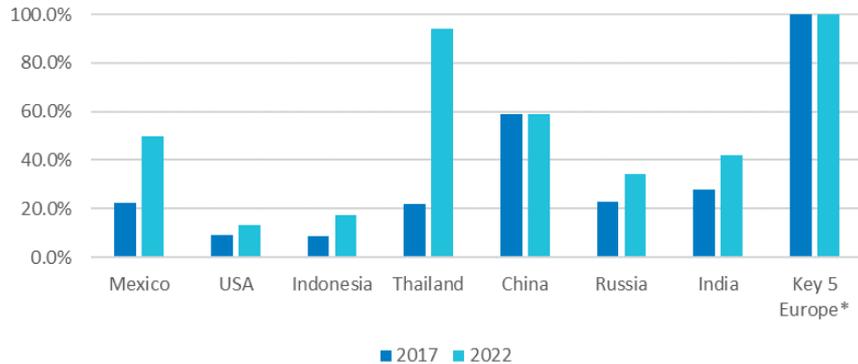
CAGR (2017-2022)
4.2% Value



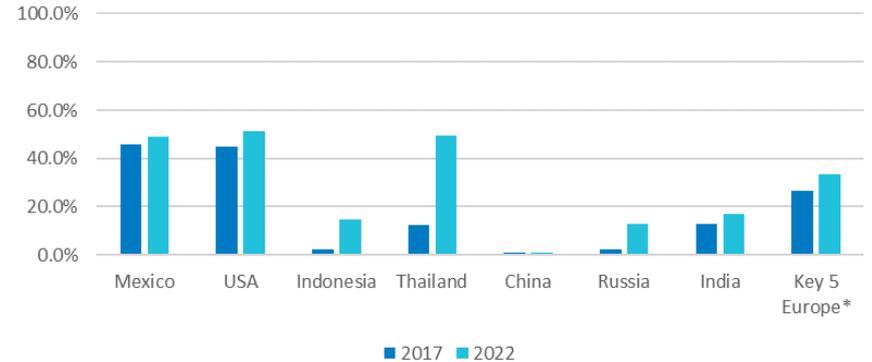
0.4 million in 2018(e)
Market volume

Energy efficiency legislation is pushing inverter technology

Penetration in single and multi splits in key countries by volume %, 2017 and 2022 (F)



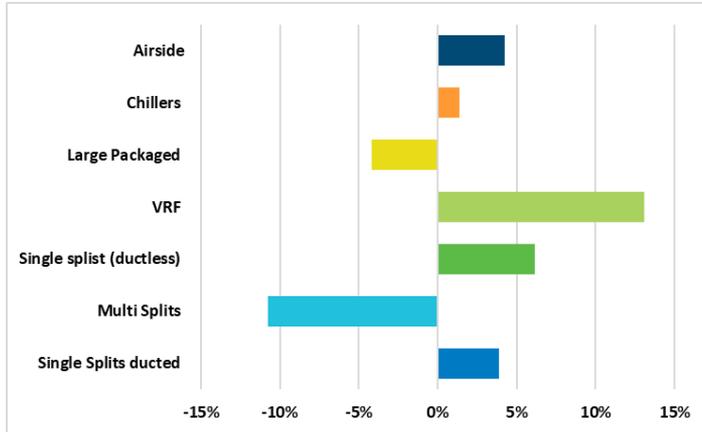
Penetration in chillers in key countries by volume %, 2017 and 2022 (F)



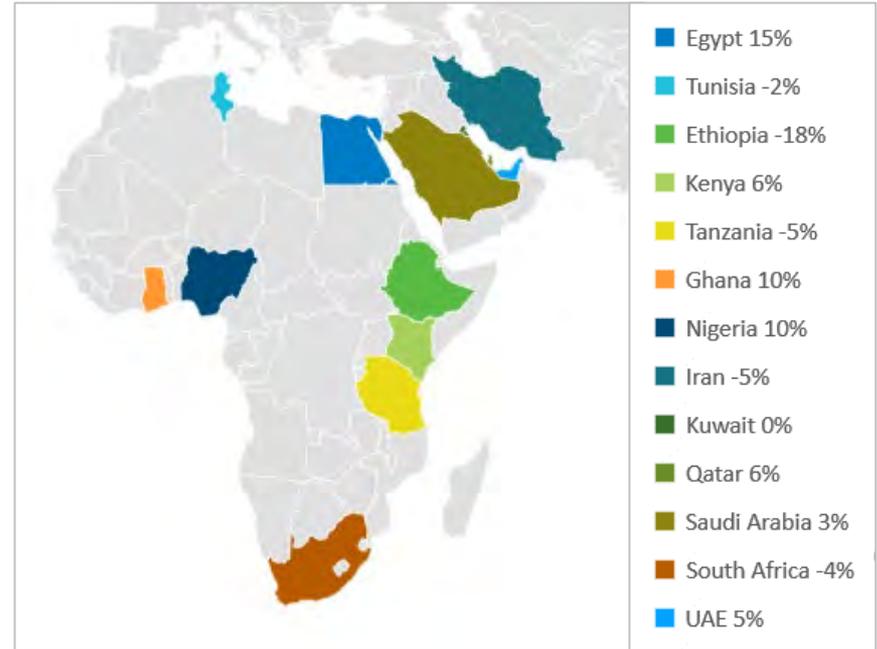
* Key 5 European countries: UK, France, Germany, Italy, Spain

Source: BSRIA

Growth by product in the MEA 2018 by volume



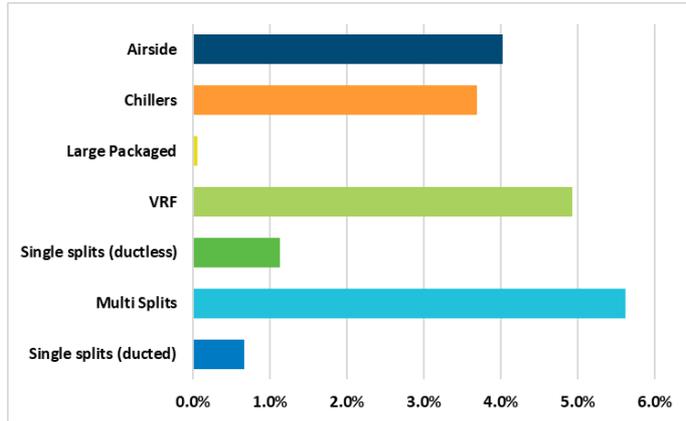
Growth rates of air conditioning in MEA countries, 2018 (units)



 6.1 billion\$ PAC Market Value	 1.8 billion\$ CPAC Market value
 CAGR 5.8% Vol + 6.1% Val	 CAGR 4.7% Vol + 5.0% Val
 8.6 million PAC Market volume	 0.9 million CPAC Market volume

Source: BSRIA

Growth by product in Latin America 2018 by volume

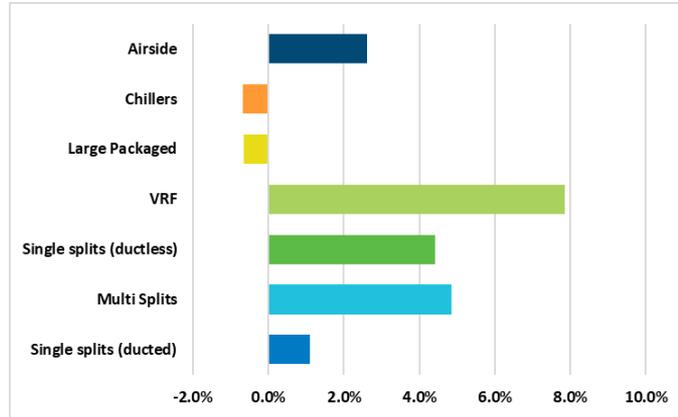


Growth rates of air conditioning in Latin America countries, 2018 (units)

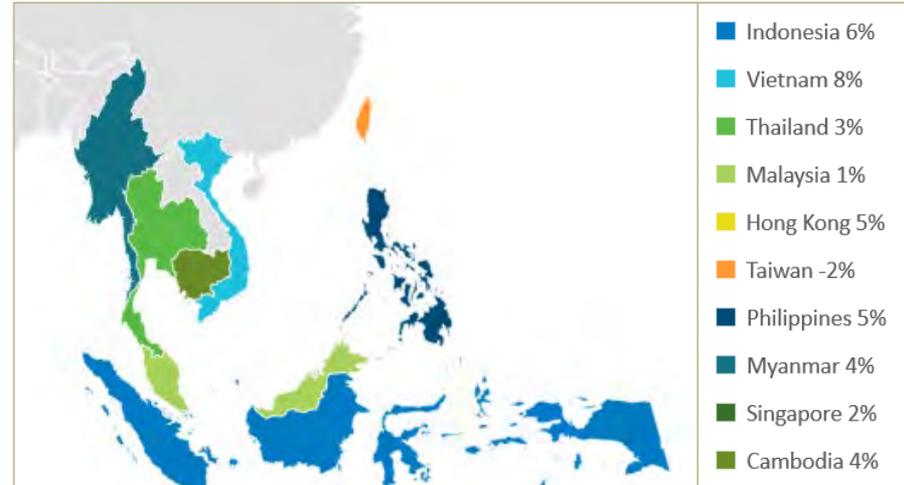


Source: BSRIA

Growth by product in SE Asia 2018 by volume



Growth rates of air conditioning in SE Asia countries, 2018 (units)



 <p>5.2 billion\$ PAC Market Value</p>	 <p>0.8 billion\$ CPAC Market value</p>
 <p>CAGR 5.0% Vol + 6.4% Val</p>	 <p>CAGR 2.8% Vol + 4.5% Val</p>
 <p>10.6 million PAC Market volume</p>	 <p>0.3 million CPAC Market volume</p>

Source: BSRIA



- ***The World AC market is growing ; emerging markets driven by urbanisation and increasing disposable income***
- ***Refrigerant switch will impact technologies of the future***
- ***Environmental and legislative measures will drive up energy efficient products and solutions, but also encourage the use of alternative solutions for more efficient buildings.***

Thank you



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