



Achilles

Smoke filter for wood stoves

Achilles' system is not just a solution, it's a revolution



Wood stoves account for 33% of the world's black carbon, and respiratory particles air pollution, affecting health, the climate, and all of us.





The Impacts of Air Pollution from Black Carbon in Wood Stoves

Air pollution from wood-burning stoves is a serious global issue that affects health, climate and the economy.

Many countries are taking steps to reduce emissions and promote clean energy alternatives.

Environmental & Climate Impacts

- Severe air pollution - 33% of the world's respiratory black carbon particles.
- Accelerates global warming and melting glaciers.
- Causes extreme climate events (floods, droughts)

Health Effects

- Causes respiratory and cardiovascular diseases (asthma, bronchitis, stroke).
- Particularly harmful to children, the elderly, and chronic patients.

Economic Damages

- Healthcare Costs – Hundreds of billions of dollars annually.
- Agricultural Losses – Reduced yields and rising food prices.
- Infrastructure & Natural Disasters – Stronger storms and climate instability.
- Lower Workforce Productivity – More sick days, reduced economic output.

**600,000 deaths per year
worldwide are associated with
exposure to smoke from wood
stoves!**



Technological Solutions to Reduce Smoke and Pollution from Wood Stoves

. Advanced Wood Stove Technologies

✓ Pellet stoves are a modern and efficient heating solution that uses compressed wood pellets as a fuel. They offer many benefits, including high energy efficiency, low emissions, and operational convenience.

✓ EPA & ECODESIGN Certified Stoves

Modern wood stoves that improve the efficiency of burning wood.

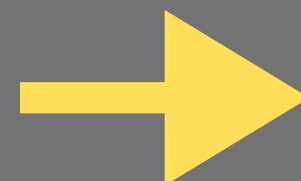


Plate stoves require electricity to operate, a high purchase cost, and dedicated combustion material at a cost of about \$2,000 per season

100 million wood-burning stoves worldwide and a growth of 7.5% per year.

People continue to prefer the traditional wood-burning stove!

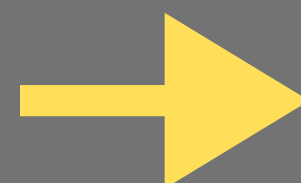
Filtration Systems for Reducing Pollutant Emissions

✓ Electrostatic Precipitators (ESPs)

Devices installed in the chimney that collect fine particles using an electric charge.

Reduce up to 90% of particulate pollution.

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Electrostatic electricity is effective at temperatures around 300 degrees C at the end of the chimney and is ineffective below .
Requires high maintenance .
High cost

There is no filtering system that can handle the complex problem.



Achilles vision

Bringing Innovation to Tradition

We take the traditional wood stove, a source of comfort for over a hundred million users and turn it into a sustainable, efficient and environmentally friendly heating option.

We can dramatically reduce global air pollution levels, protect public health and contribute to the fight against the global climate crisis.

Our main goal is to bring Achilles to every home that has a wood stove in the world





Product

- Achilles system easily connects externally to any type of chimney of any stove.
- Pollution levels are effectively reduced by 90%, eliminating significant amount of respiratory particles, black carbon, and other toxins.
- Affordable system that requires one time installation and minimal maintenance.
- The self-washing mechanism means there is no need for cleaning or expensive parts replacement.
- Water filter-drain cycle allows for simple disposal of endless amounts of black carbon throughout the years.

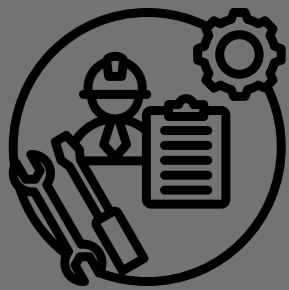
* Disposed water contains organic material that is an excellent garden fertilizer.





The Solution

The Solution We Offer



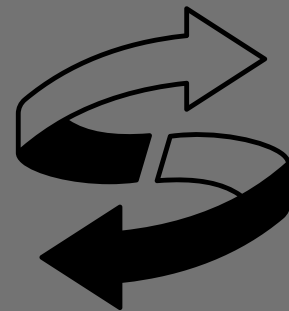
Low Maintenance

Achilles system cleans smoke particles - tens of kg per season, while requiring minimal maintenance.



Affordable

Selling price is \$1400 compared to \$2400 for an average ESP filtration system, or an investment of over \$3000 to replace with a pellet stove



Preserves tradition

Customers may keep their existing traditional wood stove, which is often the centerpiece of their home.



Safety

The system is externally connected to the chimney and does not interfere with the standard operation of the wood stove.



Optimal Effectiveness

The system starts operation automatically as the chimney smore reaches the operating temperature. Filtering is efficient from 50°C and above.

Company History

4 years ago we set out looking for a solution to clean the smoke of the wood stoves we use to heat our homes. Frustrated with the lack of adequate solutions on the market, we decided to develop one.

- We surveyed available filtering technologies.
 - A development and testing workshop was built to help us start exploring solution
 - A team of expert engineers was assembled.
 - 5 prototype generations were built, tested and optimized.
 - We conducted dozens of experiments, including chemical laboratory tests according to EPA standards.
- The latest generation developed proved its smoke filtering effectiveness and complies to our set price point.





Chemical laboratory test results

- Emission rate before the system: 27 gr p/ h
- Emission rate after the system: 4.9 gr p/ h
- 82% reduction in black carbon particle pollution



Emission rate before the system

Emission rate before the system

שני פלטיניום - לפני מתקן טיפול - TEST 1

נספח ה' - תוצאות בדיקת מזהמי אויר בארובה ה-1-ריכוז תוצאות הבדיקה

ג. טבלת תוצאות

מבצע הדיגום : אנטולי קוליקוב																		הערות:			
יזום הדיגום :																נדב ברזילי					
המפעל																					
שעת בדיקה		שיטות דיגום ואנליזה												תנאי ארובה				תוצאות הדיגום			
התחלה	סוף	המזהם	קבוצת סיווג (ע"פ TA-LUFT 2002)	שיטת הדגימה	שיטת האנליזה	תכולת המים בארובה (% נפחי)	מהירות בתנאי ארובה	טמפרטורת הגזים הנפליטים	אחוז חמצן נמדד	אחוז לנירמול	ספיקת הגז בפועל	ספיקת הגז בתנאים סטנדרטיים	ריכוז נמדד		ריכוז מנורמל	קצב פליטה	ערך סף הגילוי	ערך סף הכימות			
													מ"ג/מק"ת	PPM							
10:35	11:23	חלקיקים	חומר חלקיקי	EPA 5	EPA 5 - Gravimetric	6.23	3.21	168.29	19.47	לא נדרש	262.6	151.1	179.055	-	לא נדרש	0.0271	0.7948	2.6468			



Competitive Analysis

Electrostatic
Precipitation system



Water filtration and
drain system



\$2,400	Selling price	\$1,400
High maintenance - climbing on roof several times throughout the winter to clean the filter	Maintenance requirements	No maintenance
The black carbon emissions are returned through the chimney to the stove	Black carbon disposal	The black carbon emissions are flushed out into the garden or the sewage system.
Blocked filters harms stove operation	Safety	Failure in system does not affect operation





The Team



Amir Naftali
CEO – Co-founder

30 years of experience as a CEO
of private and public companies



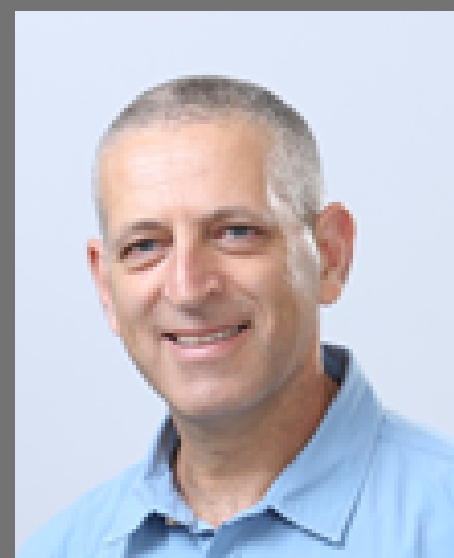
Gonen Yuval
Co-Founder

serial entrepreneur and inventor,
owner of a workshop for product
development and prototype building
services for the medical field



Yanir Dashel
CTO

Senior R&D engineer
specialized in hot/cold piping
design at the Israel Electric
Company.
Expert in complex
electromechanical systems
R&D and installations



Rami Lore
NPI manager

Rich experience in product
development and
manufacturing.
Expert in , plastic engineering
and prototyping of
mechanical devices.



Oded Gera
Senior Advisor

Seasoned Investment banker and
entrepreneur.
Chairman and founder of
Rothschild & Co. Israel.
Trustee of the Alliance of Religions
for Conservation/Sustainability.

Our team of experts also has years of experience in using wood stoves as the main heat source

The market need is also our personal need, every winter



Target Market Opportunity

There is no solution that was adopted by the vast market

The global market for active wood stoves has reached 100 million units.

Our target regions include the USA, Europe, Canada, Australia, and Israel, accounting for around 53 million active wood stoves collectively.

There is an annual growth of 7% in the scope of the market



Hearth Market Size, Share, Trends & Growth Industry Report 2032

The global Hearth Market in terms of revenue was estimated to be worth \$10.9 billion in 2024 and is...

MarketsandMarkets

The first markets we intend to address:

- USA: 12 million.
- Canada: 3.6 million.
- Europe: 26 million.
- Australia: 2.5 million.
- South America: 10 million
- total 54 million active wood stoves



Market penetration strategy

Step 1:

Market penetration through wood stove distributors.

We have made initial contact in the US and Canada, they are showing great interest in Achilles.

We need to demonstrate operation of the final product to be able to secure LOIs or pre-orders.

Step 2:

Market penetration through DIY chains.

There are thousands of stores owned by large chains that are well spread out around the world once Achilles is ready for serial production and wide distribution.

10 K Stove Dealers



Direct Marketing:
Through Social and
Digital Media

12 K DIY Chains





Sales forecast

- The cost of the system to the dealer is \$660 (before local tax)
- Expected price for the customer \$1400

REVENUES	Y	Y+1	Y+2	Y+3	Y+4	TOTAL	
ISRAEL	\$ 300,000	\$ 3,500,000	\$ 5,000,000	\$ 6,000,000	\$ 7,000,000	\$ 21,800,000	
U.S		\$ 1,400,000	\$ 7,000,000	\$ 35,000,000	\$ 60,000,000	\$ 103,400,000	
EUROPE		\$ 1,400,000	\$ 6,000,000	\$ 25,000,000	\$ 45,000,000	\$ 77,400,000	
TOTAL	\$ 300.000	\$ 6,300,000	\$ 18,000,000	\$ 66,000,000	\$ 112,000,000	\$ 202,300,300	
UNIT							PERCENT OF THE MARKET
ISRAEL	452	5271	7,530	9,036	10,542	32,831	11%
U.S		2,108	10,542	52,711	90,361	155,723	1.56%
EUROPE		2,108	9,036	37,651	67,771	116,566	0.49%
TOTAL		9,488	27,108	99,398	168,675	305,120	



Regulation

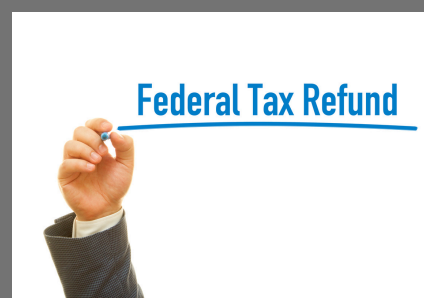


EPA standard



The standard in the US and Canada requires compliance with 2 grams per hour PM2.5 particulate emissions. Existing filtering solutions do not comply, or partially comply. Some of the pellet ovens are meet the criteria.

US federal tax return



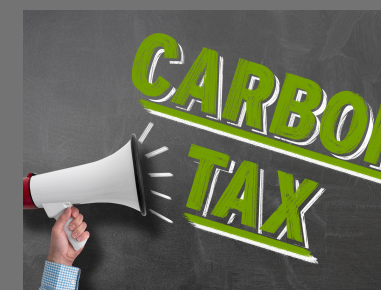
There is a federal tax refund until 2032 in the amount of 30% for switching to a wood stove that meets the standards. We expect the same reimbursement for Achilles after we prove its effectivity.

ESG 2030 regulations



According to the ESG2030 policies, there is an energy rating for houses and reference to the issue of air pollution. By using Achilles, home owners will effectively increase the value of their houses.

Carbon tax



There is a black carbon reduction fee that can be rented

Achilles Gen 5 prototype performance is close to the required level of 2 grams per hour. We are working on a Gen 6 technology that will fully comply with the required standard



Milestones 12 months ahead

Milestone 1

Milestone 2

Milestone 3

Milestone 4

Design freeze for the new Achilles system

Improved filtration, noise reduction, weight and size reduction, price-point compliance.

Completion of the system development phase, final tests for pollutant filtration effectiveness.

Successful completion of a small pilot trial

Completion of a trial on 10 systems in Israel, monitoring systems and proving success parameters that will be defined for the trial:

- Pollution level reduction to required standard.
- Noise requirements compliance.
- proper operation of all stages of the system.
- Monitoring and control of all set indicators.

Successful completion of an advanced development trial

Completion of a trial on 50 systems in one of the target markets in US/Europe.

Full monitoring and proof of success parameters that will be defined for the trial:

- typical continuous activity throughout the trial
- Compliance with the pollution standard.
- No need for maintenance.
- Minimal malfunctions, proper monitoring and alerting.

Passing standard tests

Achieving standard approval in Israel, the USA and Europe

Forecast for the future - after IIA grant program

Year 1:

The company plans to establish an assembly line in the north of Israel in Development Area A.



Year 2:

The company plans to expand distribution and marketing to many countries in Europe, USA / Canada through local supply chains



Year 3:

The company plans to expand the assembly line to allow serial production quantities and production line and increase the workforce to accommodate growing market demands.





Thank You

Contact Information

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