

The illustration features a light beige background with a large, semi-circular sun in the upper center, composed of horizontal lines. In the foreground, there are stylized hills in shades of light brown. On the left and right sides, there are industrial buildings and smokestacks. The smokestacks are tall, thin, and light brown, with dark brown smoke rising from them. The buildings are rectangular with a grid pattern of windows. The overall style is minimalist and modern.

CLIMATE CHANGE IN HAMILTON

Air Pollution

Rabab, Ming, Leo, Mello

What is climate change?

A long term shift weather patterns
and the earth's temperature

Nathanson, J. (2019)



Figure 1: *Klimawandel* by by-studio
<https://l8.nu/thSC>



Hamilton

ABOUT THE CITY

- Located less than one hour west of Toronto
- Population - 569,353
- 1,118 km²

City of Hamilton. (2019)



Figure 2: *Aerial of Hamilton, Canada in the autumn* by Harold Stiver
<https://i8.nu/rVB->

What is the problem?

01

Bad Air Quality

02

Caused by harmful chemicals

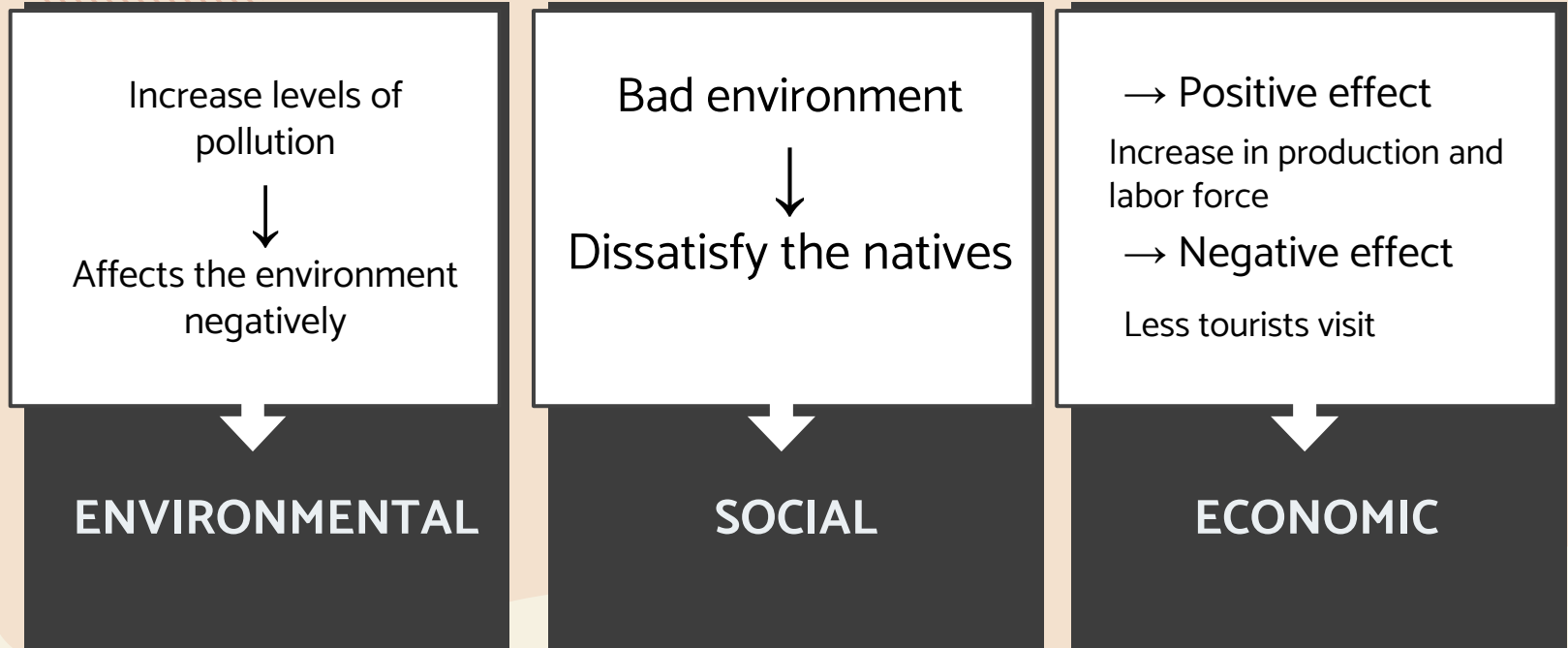
03

This decreases the quality of life

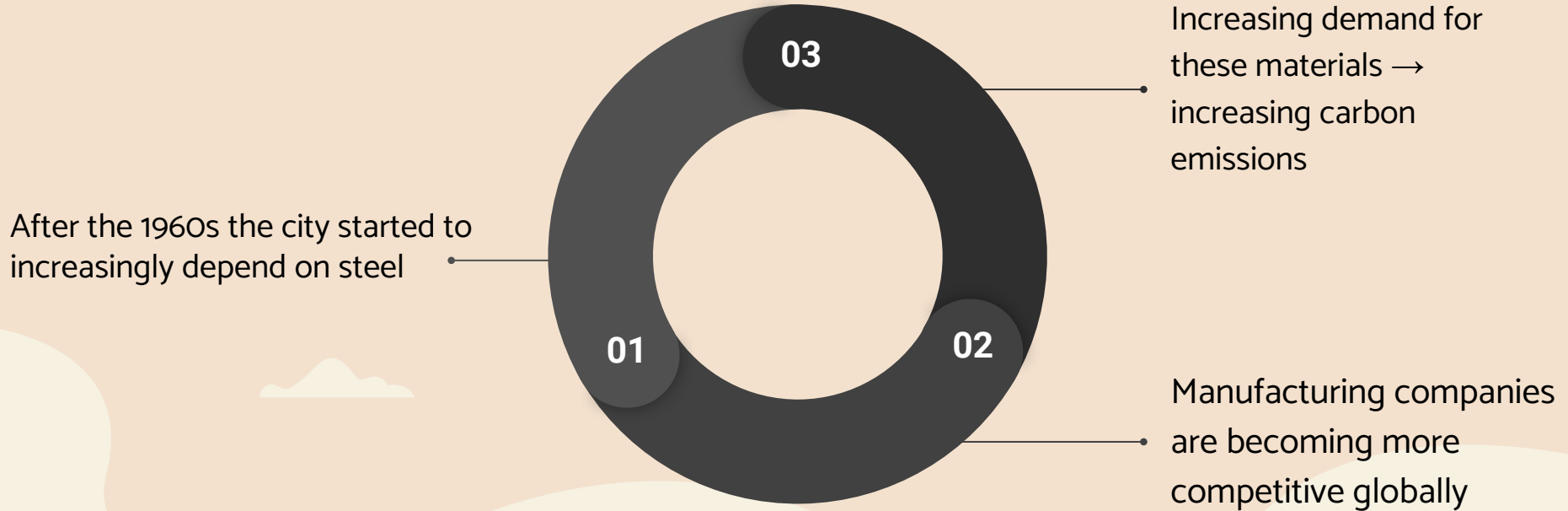
04

Affecting all three pillars

3 Pillars



When does/did this occur?



**“Hamilton is responsible
for more than half of
steel production in
Canada”**

Dear, M. J., (1987)

Why did this occur?

The city has a lot of factories and industries, and they have been dependent on their production for a long time.



Figure 3: *Coal piles and smoke stacks at Dofasco could soon be a thing of the past* by John Rennison <https://l8.nu/tj5j>



It is said...

“People were highlighting this issue for a long time, criteria were set out for different industries, however for Hamilton the pollution level are measured only in some areas, not the entire city. ”

Benzo[a]pyrene

- This pollutant is emitted by the incomplete combustion of fossil fuels
- It is very toxic as it causes;
 - Cancer
 - Induce genetic mutations

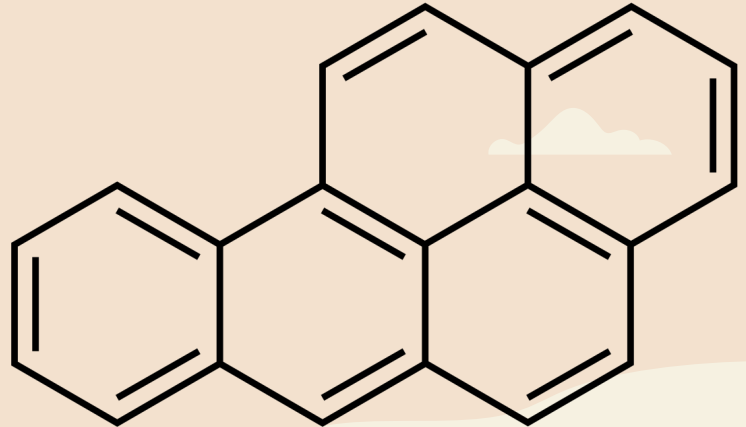


Figure 5: chemical structure

Wikipedia Contributors. (2022, October 25). Benzo(a)pyrene. Wikipedia; Wikimedia Foundation. <https://en.wikipedia.org/wiki/Benzo%28a%29pyrene>

ArcelorMittal Dofasco

The company ArcelorMittal Dofasco holds exemptions to emit higher levels of this chemical → increasing air pollution

Carter, A. (2015, February 27).



Figure 6: ArcelorMittal Dofasco

Our History and Our Future | ArcelorMittal. (n.d.). Dofasco.arcelormittal.com.

Retrieved July 26, 2023, from

<https://dofasco.arcelormittal.com/about-us/our-history-and-our-future#:~:text=Today%2C%20ArcelorMittal%20Dofasco%20operates%20on>




Figure 7: Dofasco producing steel

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Retrieved July 26, 2023, from

<https://dofasco.arcelormittal.com/about-us/our-history-and-our-future#:~:text=Today%2C%20ArcelorMittal%20Dofasco%20operates%20on>



The company has around 5,000 employees

Produce + ship more than “4.5 million net tons of steel” across north america

ArcelorMittal

Any application?

ENVIRONMENT

- Water and Soil Contamination
- Acid Rain
- Ozone Depletion
- Biodiversity Loss



Figure 8: Environment concept hand holding young plant on green blur with sunshine background by lovelyday12 <https://l8.nu/rWRm>

Any application?

HEALTH

Short-term

- Respiratory irritation
- Asthma
- Risk of heart attacks

Long-term

- Chronic respiratory diseases
- Cardiovascular issues

How air pollution affects our health. (2023, May 25).



Figure 9: *Stethoscope and red heart on table* by Africa Studio
<https://i8.nu/rWR9>

Any application?

ECONOMIC

- Health Care Costs
- Impact on Agriculture
- Increased Energy Costs



Figure 10: *Hand holding money bag concept saving finance and accounting* By lovelyday12 <https://l8.nu/tj53>

What should be done now?

The solution can be proposed on many different scales:

- R&D
- Pollution detectors
- Subsidize (New Furnaces)
- New Regulation (Stricter)
- Public Awareness

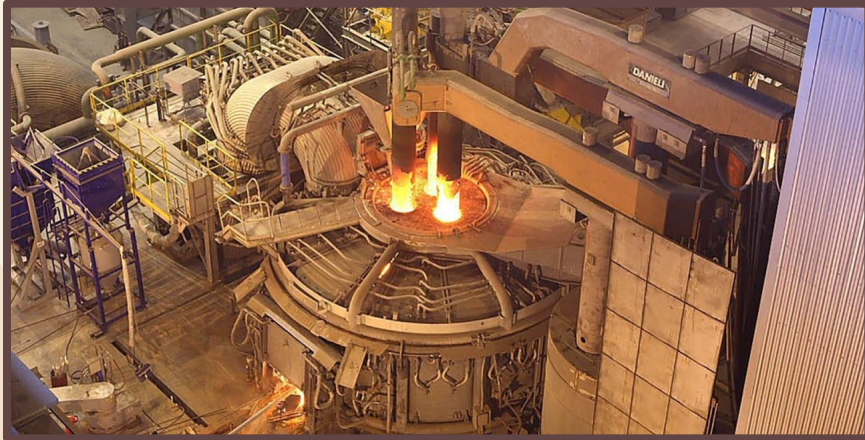


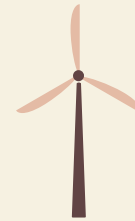
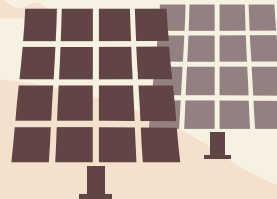
Figure 11: *Electric Arc furnace*, <https://www.linkedin.com/>



What should be done now?

The solution can be proposed on many different scales:

- Lower Energy Consumption
- Raise Awareness
- Sustainable Living
- Indoor air quality



Video



Hamilton, Ontario

High levels of cancer-causing pollutant found across Hamilton, ON

https://youtu.be/l_ZGf_b4mk

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THANKS!

Do you have any questions?