



# **SCDF**

The Life Saving Force

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# **SCIC 2023: Fire Statistics and Case Studies**

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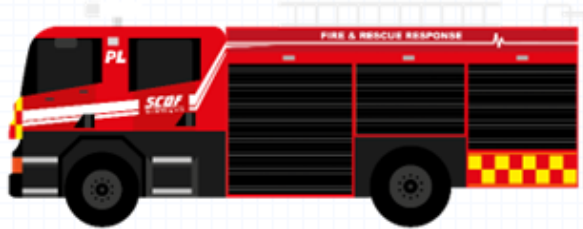
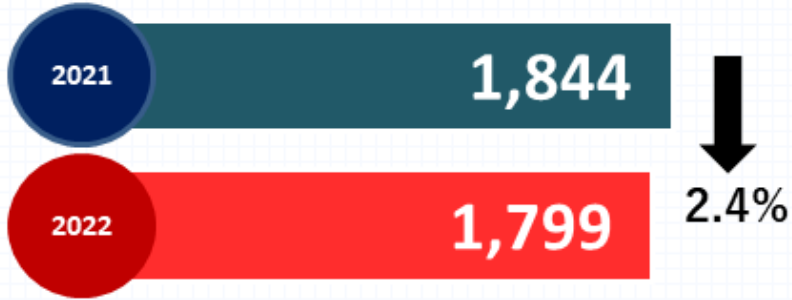


# Scope

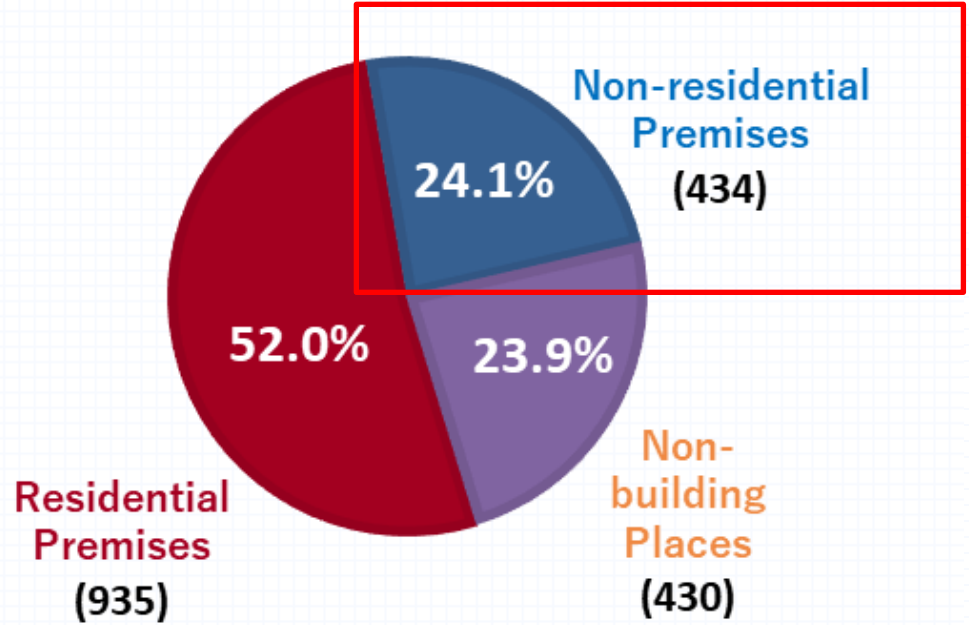
- Fire Statistics
- Case Studies of Fire Incidents

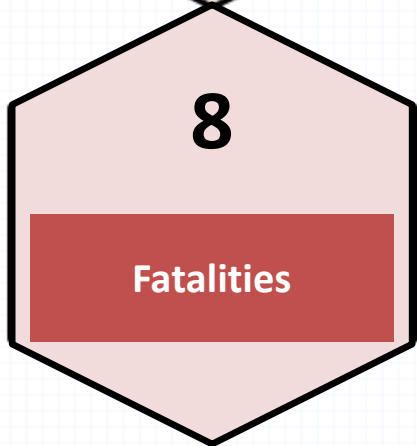


## Total Fire Calls



## Breakdown of Fire Calls

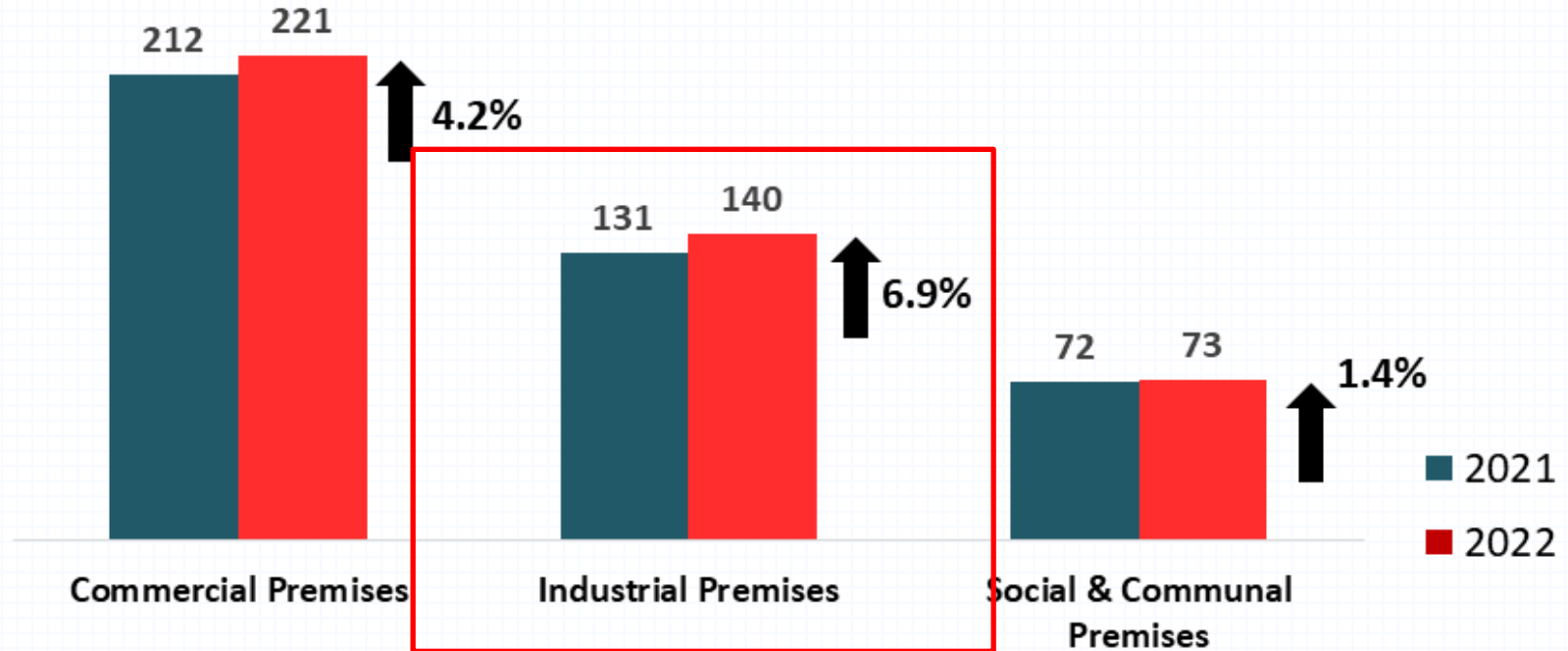




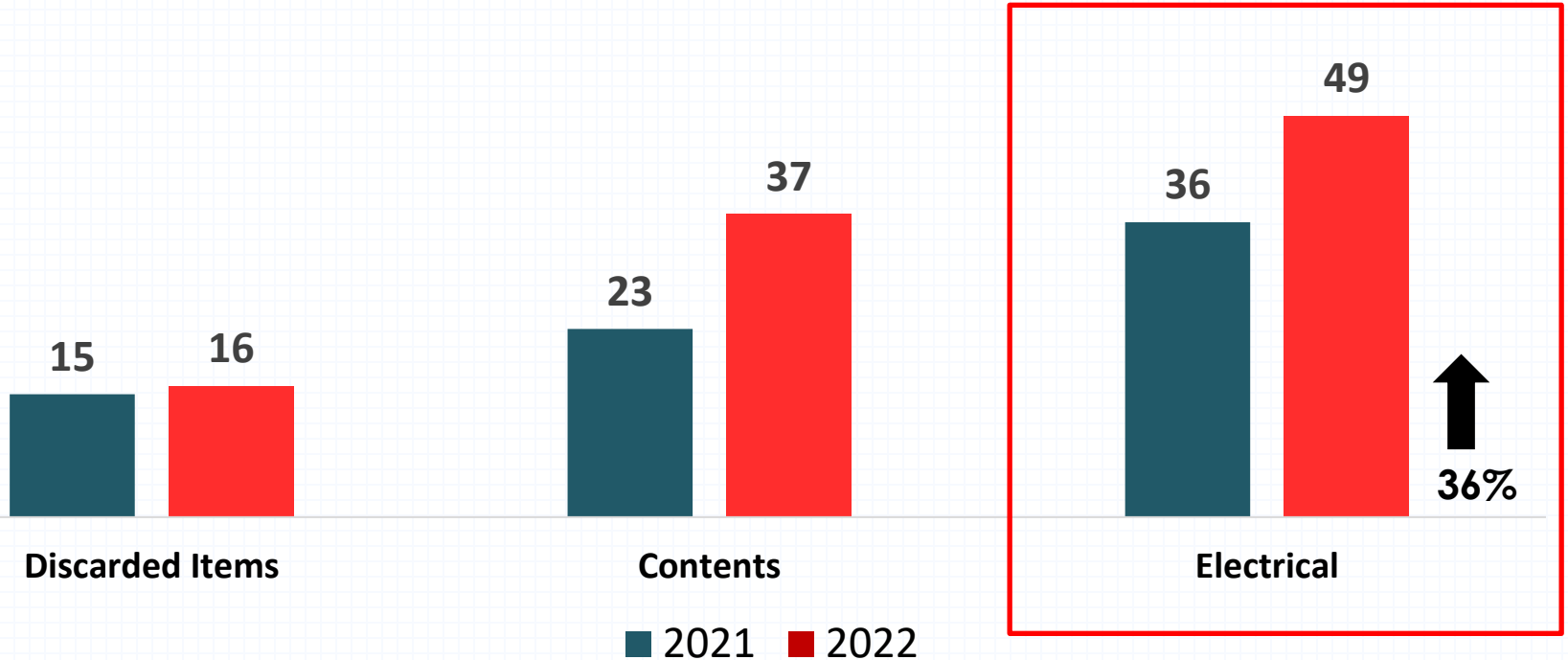
## Cause of fires



# Breakdown of Fires at Non-Residential Premises



# Top 3 Types of Fires in Industrial Premises

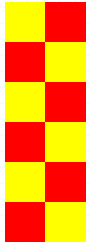




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## **Case Studies**



# Case Study #1

- Fire originated from discarded industrial bags inside the waste container.
  - Presence of Calcium Hydroxide, a by-product of Calcium Oxide with rainwater.
  - Fire occurred as a result of exothermic reaction from calcium oxide ( $\text{CaO}$ ), also known as quicklime
- The fire affected the contents in the waste container and spread to the waste container beside it.





# Case Study #1



Photos showing the area of fire origin at the waste container.





# Case Study #1



Photos showing the damages inside the waste container.



# Case Study #2

- Fire occurred during the oil transfer between the ISO tank and skid tank
  - Static electric discharge is the most likely cause of ignition
  - Oil, carbon pile, car filters, machineries and forklift were ignition fuels
  - Workers did not use earthing cables since the building structures have their own earthing points (lightning protection system)
- The fire affected the contents of warehouse



# Case Study #2



Photos showing the extent of damage to the warehouse.





# Case Study #2



Photos showing the machineries, carbon pile and interior walls of the warehouse sustained fire damages.



# Case Study #2



# Case Study #3

- Fire occurred as a result of electrical anomaly at the electrical fixtures or spontaneous combustion of the construction waste
  - Electrical fixtures (exhaust fan, flood light) in the warehouse malfunctioned since last year. Although electrical appliances were not in use, company did not engage electricians to cut off electrical supply. Electrical wiring of warehouse was last maintained 23 years ago.
  - Waste pile might include e-waste or other chemical waste that was undetected.
  - Construction waste (steel, metal, plastic, wood, etc) stored in the warehouse were the ignition fuels.
- The fire affected the contents of warehouse





# Case Study #3



Photos showing the extent of damage to the production area.





# Case Study #3



Photos showing the damaged electrical fixtures (L-R: Missing bay light, damaged electrical fixtures, missing exhaust fan).



**Thank You**

