

# Environmental Issues

## I. UNIT OVERVIEW & PURPOSE:

This unit will involve a mathematical exploration of the environment, as well as environmental issues that the students will explore through various methods. They will be shown graphical displays of data and will create their own mathematical models to interpret and predict future environmental issues. Students will also research environmental issues to investigate if their "predictions" are correct.

## II. UNIT AUTHOR:

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## III. COURSE:

Mathematics Capstone Course

## IV. CONTENT STRAND:

Algebra, Geometry, Probability and Statistics, Problem Solving, Decision Making, and Integration, Understanding and Applying Functions

## V. OBJECTIVES:

SOL AII.2, 6, 9

## VI. MATHEMATICS PERFORMANCE EXPECTATION(s):

MPE.1 The student will solve practical problems involving (including numbers in scientific notation), percents, ratios, and proportions.
MPE. 2 The student will collect and analyze data, determine the equation of the curve of best fit, make predictions, and solve real-world problems, using mathematical models. Models may include polynomial, exponential, and logarithmic functions.
MPE.12 The student will transfer between and analyze multiple representations of functions, including algebraic formulas, graphs, tables and words. Students will select and use appropriate representations for analysis, interpretation and prediction.

## VII. CONTENT:

Students will be introduced to global environmental problems with this unit. A mathematical lesson applying data analysis, scatter plots, and linear regression will be used to analyze the global pollution issues. Students will then be asked to research environmental issues within their own cities, towns, and cultures and use mathematics to discuss and analyze possible solutions and improvements to the pollution problems in their local areas. Students will analyze and consider alternate-fueled recycle trucks and improving recycle programs with mathematical analysis of most-efficient route planning and financing of more energy efficient recycle pick-up vehicles

## VIII. REFERENCE/RESOURCE MATERIALS:

Smart Board/ Promethean Board

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TI-84 Graphing Calculator/ Projector
Microsoft Excel
Internet Access
Journal Pads or Other Journaling Item
Digital Cameras and/ or Video Recorders

## IX. PRIMARY ASSESSMENT STRATEGIES:

Journaling, Exit slips on lesson topic lesson 1 day 1, Homework assignments, peer/class discussions, formal assessments such as the advertisement/production on lesson 1, finding the most efficient route of their neighborhood, and estimating monthly payments of different recycle trucks and deciding which truck to purchase

## X. EVALUATION CRITERIA:

Students will be evaluated on mathematical accuracy for homework and solving other mathematical equations. Journals, projects, and class discussions will be evaluated by the students' abilities to apply the mathematics to the environmental projects. The student will be evaluated by the depth and understanding of the environmental issues discussed as well as their abilities to apply mathematics to the environmental discussions at hand.

## XI. INSTRUCTIONAL TIME:

This unit will be based upon 4-5 90 minute block classes.

# Lesson 1: What's on Your Mind about Environmental Issues?

**Strand**

Algebra, Probability and Statistics, Problem Solving, Decision Making, and Integration

**Objective(s):**

*The student will:*

- Analyze graphs and data in order to understand environmental issues
- Create appropriate graphs to display their data
- Create scatterplots using technology, Excel and or Graphing Calculator for various data sets
- Analyze several scatterplots in order to determine the appropriate curve of best fit
- Predict future information using the models of curve of best fit

-Complete writing prompts on various topics related to environmental issues.

-Use the Internet to research various environmental issues in order to expand on various homework problems, as well as retrieve current data on an environmental issue of their choice.

-Use other resources such as a local newspaper, magazines or the Internet to gather, analyze and communicate with their peers on a current environmental issue.

**Mathematics Performance Expectation(s):**

MPE. 2 The student will collect and analyze data, determine the equation of the curve of best fit, make predictions, and solve real-world problems, using mathematical models. Models may include polynomial, exponential, and logarithmic functions.

MPE.12 The student will transfer between and analyze multiple representations of functions, including algebraic formulas, graphs, tables and words. Students will select and use appropriate representations for analysis, interpretation and prediction.

**NCTM Standards**:

-Understand and compare the properties of classes of functions, including exponential, polynomial, rational, logarithmic, and periodic functions;

-Use symbolic algebra to represent and explain mathematical relationships;

-Draw reasonable conclusions about a situation being modeled;

-Understand the meaning of measurement data and categorical data, of univariate and bivariate data, and of the term variable;

-Understand histograms, parallel box plots, and scatterplots and use them to display data

-For bivariate measurement data, be able to display a scatterplot, describe its shape, and determine regression coefficients, regression equations, and correlation coefficients using technological tools;

-Build new mathematical knowledge through problem solving

-Solve problems that arise in mathematics and in other contexts

-Organize and consolidate their mathematical thinking through communication

-Communicate their mathematical thinking coherently and clearly to peers, teachers, and others

-Analyze and evaluate the mathematical thinking and strategies of others;

-Use the language of mathematics to express mathematical ideas precisely.

**Materials/Resources**

- Classroom Set of TI-84 Graphing Calculators
- Access to computers or other digital devices with Internet



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- Microsoft Excel or any other spreadsheet program
- Journal pads for the students or another creation for journaling
- Computer access to a Promethean board or presenter to show videos
- Digital Cameras and/ or video recorders

**Assumption of Prior Knowledge**

Students coming into the capstone course should have completed Algebra 1, Geometry, and possibly Algebra 2. Therefore the students should be comfortable with (after a quick review) of scatterplots, line of best fit, and predicting future information given the appropriate model. Also, students should have taken at least Earth Science and/or Ecology and be familiar with some environmental issues whether local and/or worldwide. Teacher will have insight to their background knowledge through journaling and bell-ringer problem(s) presented to the class prior to jumping into our lesson.

## Introduction: Setting Up the Mathematical Task

- The goal of this lesson is for students to recognize various past and current environmental issues, such as air pollution, deforestation, etc. They will do so by communicating their own interests on a particular environmental issue, researching various topics, gathering data on these issues, analyzing the data, and using the data to predict future information on the environmental issue.

### DAY 1:

**Bell-ringer:**

- The students will be presented with a journaling topic on the board as they walk into the classroom. They will have 5-8 minutes to write as much down as possible. They can do lists or complete sentences.
    - "What does 'environmental issue' mean to you? What is an environmental issue that concerns you the most? Is it a local problem? Explain."
- The students will then form collaborative groups…no more than 3 in a group. They will share their responses with each other for about 2-3 minutes and then one person from each group will give the class an overview of their concerns to the class.
- The teacher will write these issues on the board or somewhere in which it can be returned to for reference later in the lesson.

**Lesson:**

- Now, the teacher will show the following YouTube video (this can always be updated with a different environmental issue video or newspaper article. http://www.youtube.com/watch?v=Z8CiJ97N1_c This video is illustrating the air pollution problem currently in China.
- After the video, the teacher will open up the floor for discussion and thoughts from the students concerning this environmental issue. What's your knowledge of air pollution? Do we have to worry about air pollution in our area? Why or why not? How does it affect our (and other animals') way of living? (The teacher can have a student leader(s) in order to jot down the responses given by students). (5-10 minutes)
- Now, the teacher will have the students work on computers or perhaps even their cell phones and do some research on their environmental issue. The teacher will try not to provide a script of questions for the students to find answers to in order for the students to experience real-life "researching"; however, if students get stumped then the teacher will offer them suggestions as to where and what to look for. Students can also begin

to find a current article on their environmental issue in order to present to the class later in the week. *****If there are students with the same environmental issue they may work together. If it seems there are a lot of the same issues, the teacher may want to jump in and offer a list of other issues such as: deforestation, water pollution, and other issues that were discussed during the bell-ringer. There should not be a classroom full of air pollution researchers. This will make for a boring future.** (40-45 minutes)

- While the students are being researchers the teacher will facilitate and prompt any students in their research and will also post data on various variables on air pollution in China on the Promethean board or presenter. environmental data on china.xls [See Index for Data]
- Using Beijing and looking at the waste gas emission, the teacher will ask the students, "How can we look at the relationship of the years and the waste gas emission levels? Would a bar graph work? Pie chart?" Oh wait, if no student has mentioned scatterplot then suggest "correlation" and see what they come up with. (remaining class period)
- Have the students partner up and see if they can remember/recall together how to construct a scatterplot using the graphing calculator.
- Did they remember? If so, have a student present the steps of using the calculator to illustrate the scatterplot. If not, the teacher will facilitate the steps using the calculator.
- Once the scatterplot is drawn, the teacher will ask, "What does this show us? Is there a relationship between the years in Beijing and waste gas emission? If so is it positive or negative? "
- Teacher will propose the question, what was the estimated waste gas emission in 2000? How could we figure this out? Need to find a model of this data. Does this data show a linear relationship? (Only ask if this wasn't answered previously).
- Have students partner up again and see if they can remember how to find the line of best fit using the calculator? If so, then a student will present the steps, and if not the teacher will facilitate the steps.
- Getting the line of best fit of $y = 11.752x + 228.297$, we will then use to find the predicted value for 2000? Have the students work on the answer. ****Students may make the mistake of putting 2000 into the x, why can't we do this? So they need to figure out what number to use for year 2000 ($x = 14$). They should get the waste gas emission of 392.811. Have them communicate what this means.

**WRAP-UP:**

- Teacher will ask for a recap of today by having students fill out exit forms answering the following questions; what did we learn? What was the most interesting, unusual part of class? What mathematical concept did we start today? Does everybody remember how to use the calculator to draw a scatterplot and find the line of best fit? What's one interesting thing you found through your research? Is there something you are having trouble finding in your research?

Tonight's homework: research and see if you can find out if the estimate of the waste gas emission in 2000 in Beijing, China that was found using our model of the data given is on target. Also, using that same model please estimate what the current (2013) waste gas emissions is in Beijing. Can we truly use this prediction, meaning is it likely this answer is correct? Also, please be finding a current issue involving your current environmental

issue. If you find one, please bring it in to share in class tomorrow. Suggest the following web sites to help students begin their local research: http://www.epa.gov; http://www.whitehouse.gov/energy; http://www.environment.nsw.gov.au; http://www.environmentvirginia.org; http://www.co.hanover.va.us/works/envirmnt.htm;

## Assessment:

On Day One the teacher will be assessing their background knowledge on environmental issues through journaling and classroom discussion. The teacher also will be assessing their background knowledge on scatterplots and line of best fit using a graphing calculator by having students talk it up with a partner and facilitating when connections are being missed or overlooked. The teacher will also have students fill out informal exit forms answering follow-up questions on today's lesson. This will allow the teacher to gain informal assessment on what the students gained from today's lesson.

HOMEWORK DAY 1: (SOLUTIONS ARE PRESENTED AT THE END OF THE UNIT)

1. The table shows the amount of carbon dioxide in the Earth's atmosphere for selected years. Predict the amount of carbon dioxide in the Earth's atmosphere in 2013 and 2022. How confident are you in your prediction? You may have to do some research on more up to date statistics on this matter.

| Year | CO(2) in atmosphere (ppm) |
|---|---|
| 1968 | 324.14 |
| 1983 | 343.91 |
| 1998 | 367.68 |
| 2003 | 376.68 |
| 2008 | 385.60 |
| | |

Between 1960 and 2003, the size of vehicles in the US have changed yearly. The fuel consumed by these vehicles has changed also. The following table describes the average fuel consumed per year per passenger car in gallons of gasoline.

2.

| Year | 1960 | 1970 | 1980 | 1990 | 1995 | 2000 | 2002 | 2003 |
|---|---|---|---|---|---|---|---|---|
| Gallons consumed per passenger car | 668 | 760 | 576 | 520 | 530 | 547 | 555 | 550 |

a. Draw a scatterplot of the data above.
b. What model best fits the data set?
c. What is the modeling equation for this data?
d. Using the modeling equation predict what the gallons consumed per passenger car should be currently in 2013.
e. Is the prediction of this model accurate with current data? (cite your sources)

*****Students who may not have Internet access will be encouraged to stay after-school or come in early in the morning to satisfy that component of the lesson. If this doesn't work then the teacher will need to perhaps allow the student some research time at the beginning of the next class.**


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## DAY 2:

**Bell-ringer:**

- The students will be instructed to finish up any "research" component of their homework or any further research they need/want to do on their environment issue.
- The students will also talk amongst their peers about their homework assignment. They should discuss the following but not be limited to:
    - Research to see if you can find out if the estimate of the waste gas emission in 2000 in Beijing, China that was found using our model of the data given is on target.
    - Using same model please estimate what the current (2013) waste gas emissions is in Beijing. Can we truly use this prediction; meaning is it likely this answer is correct?
    - Any current issue involving environmental issue?
- After about 15-20 minutes, the teacher will have to facilitate and monitor the students' discussions and research in order to gauge the amount of time needed on wrapping up any research or homework questions.

**Lesson:**

- The lesson will begin with http://www.youtube.com/watch?v=_2h60i5LteY for the students to begin thinking about alternate-fueled vehicles.
- Teacher will present the students with the following problem as a **FORMAL ASSESSMENT** and they will be allowed about 30-45 minutes to complete the problem using any note, resources, or digital device that offers Internet. (Solutions to formal assessment of day 2 is at the end of the unit) Teacher can copy and paste the following problem and present as a worksheet.

| YEAR | # of vehicles |
|---|---|
| 1998 | 295,030 |
| 1999 | 322,302 |
| 2000 | 394,664 |
| 2001 | 425,457 |
| 2002 | 471,098 |
| 2003 | 533,999 |
| 2004 | 565,492 |
| 2005 | 592,122 |
| 2006 | 634,559 |
| 2007 | 695,763 |

The table shows the estimated number of alternative-fueled vehicles in use in the US per year from 1998 to 2007.

- Draw a detailed scatter plot of the data set.
- What type of model would best suit this data set?
- What is the curve of best fit?
- What can we expect the number of alternative- fueled vehicles to be today in 2013?
- What will the number be in 2018?
- Now, do some research and see if the actual numbers of alternative-fueled vehicles on the road today is close to our predicted number. Please cite your source(s).


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- When the students are finished with the alternative-fueled problem, they will need to continue with their environmental issue.
    - They need to have an understanding of the environmental issue. What is it? Why is it "bad"? Where are the main effects of the environmental issue? What are consequences of the issue? Using data found through research, the students will need to discover what type of algebraic model should be used to represent the data. What is the algebraic model equation for this data? Students need to propose a prediction of this environmental issue using the model. Students need to use this information and the current issue in order to create a production/advertisement of what we need to do now to improve this matter and why?
    - Today's class time will be the last big chunk of class that will be allotted to work on this assignment. Teachers are welcomed to take a 3rd day in order for students to complete their production/advertisement in class. But give consideration to the number of snow days or other school day adjustments that have been allocated when judging the timeframe for this assignment.

**Wrap-Up:**

- Teacher will wrap up today's lesson by having classroom discussion on what we did today, how they felt about the short assessment, and how their progress is going on their advertisement/production of their environmental issue. At this time the teacher will be able to make adjustments to the due date and if there needs to be more class time for the students to work on their project.
- Teacher will also offer time before and after school so students can have access to cameras and computers.

## Assessment:

On Day Two the teacher will be assessing their progress on their environmental issues production/advertisement by monitoring their discussions with peers and their research progress. The teacher will have a formal assessment as given in day 2's lesson plan above (the problem on alternate-fueled vehicles) in order to assess their understanding of scatterplots, line of best fit and formalizing predictions through models and current research. This formal assessment should be graded on mathematical correctness and the follow up research. It's recommended to use a point system for each question to give the student a numerical grade.

There is also a formal assessment at the end of lesson 1 that will need to be completed at home or on day 3. The students were to create a production/advertisement of their environmental issue using their research, data, and mathematical concepts to discuss future predictions and what we need to do about it to improve. Rubric is attached.


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## Math - Problem Solving : Environmental Advertisement/Production

Teacher Name:

Student Name: _____

| CATEGORY | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Working with Others | Student was an engaged partner, listening to suggestions of others and working cooperatively throughout lesson. | Student was an engaged partner but had trouble listening to others and/or working cooperatively. | Student cooperated with others, but needed prompting to stay on-task. | Student did not work effectively with others. |
| Research | There is strong evidence of research done on this particular environmental issue. | There is sufficient evidence of research done on this particular environmental issue. | There is some evidence of research done on this particular environmental issue. | There is no evidence of research done on this particular environmental issue. |
| Mathematical Concepts | Explanation shows complete understanding of the mathematical concepts used to solve the problem(s). | Explanation shows substantial understanding of the mathematical concepts used to solve the problem(s). | Explanation shows some understanding of the mathematical concepts needed to solve the problem(s). | Explanation shows very limited understanding of the underlying concepts needed to solve the problem(s) OR is not written. |
| Mathematical Reasoning | Uses complex and refined mathematical reasoning. | Uses effective mathematical reasoning | Some evidence of mathematical reasoning. | Little evidence of mathematical reasoning. |
| Neatness and Organization | The work is presented in a neat, clear, organized fashion that is easy to read. | The work is presented in a neat and organized fashion that is usually easy to read. | The work is presented in an organized fashion but may be hard to read at times. | The work appears sloppy and unorganized. It is hard to know what information goes together. |
| Creativity | The advertisment/production shows a lot of creativity and thoughtfulness. | The advertisment/production shows some creativity and thoughtfulness. | The advertisement/production shows minimum creativity and thoughtfulness. | The advertisement/production shows no creativity and thoughfulness. |


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# Lesson 2: All About Routing - Rerouting

**Strand**
Algebra, Geometry, Problem Solving, Decision Making, and Integration, Understanding and Applying Functions

**Objective(s)**
*The student will*:
- Use scaled maps
- Use ratios to calculate mileage per gallon
- Compare routes in order to analyze cost efficiency
- Calculate area

**Mathematics Performance Expectation(s)**
MPE.1 The student will solve practical problems involving (including numbers in scientific notation), percents, ratios, and proportions.
MPE.2 The student will collect and analyze data, make predictions, and solve real-world problems, using mathematical models.
MPE.12 The student will transfer between and analyze multiple representations of functions, including algebraic formulas, graphs, tables and words. Students will select and use appropriate representations for analysis, interpretation and prediction.

**NCTM Standards**
- Draw reasonable conclusions about a situation being modeled;
- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and in other contexts
- Use Cartesian coordinates and other coordinate systems, such as navigational, polar, or spherical systems, to analyze geometric situations
- Make decisions about units and scales that are appropriate for problem situations about measurement

**Materials/Resources needed for this lesson:**
- Classroom Set of TI-84 Graphing Calculators
- Access to computers or other digital devices with Internet
- Microsoft Excel or any other spreadsheet program
- Two copies of map (see below) or one transparency per group
- Computer access to a Promethean/ Smart board or presenter to show videos
- Newspaper article http://www.carynews.com/2012/11/06/66191/efficient-cary-trash-truck-pushes.html

**Assumption of Prior Knowledge**
Students coming into the capstone course should have completed Algebra 1, Geometry, and possibly Algebra 2. Therefore the students should be comfortable with (after a quick review) of Microsoft Excel, working with ratios and scales, and calculating area.

## Introduction: Setting Up the Mathematical Task

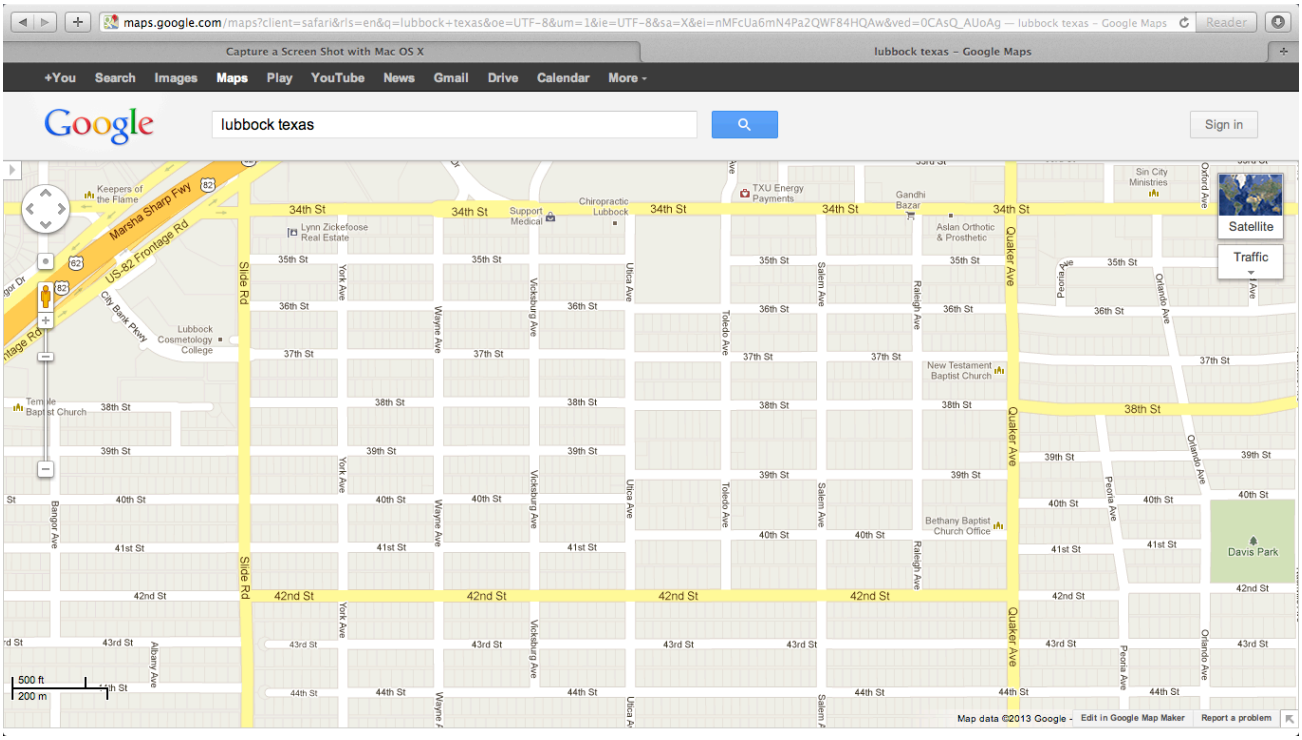
- In this lesson, the student will explore various routes using a scaled map such as the one mentioned in the lesson to discover the most efficient route for recycling trucks through the use of algebraic and geometric concepts, as well as spreadsheets.

**Bell-ringer:**

- Students will read an article about Alternate Fueled Recycle Trucks (see link below) and will respond to the following journal discussions**.**
    - "In addition to your general thoughts about the article, what are your feelings as it relates to the gas mileages of the Recycle trucks?"
    - "Estimate the amount of gas in gallons that a Recycle truck uses in a day."
    - In groups of three, compare estimates and decide within your group what appears to be the best estimate and what information you would need to make an accurate estimate of daily gas usage for a Recycle truck.
- Link to Article: http://www.carynews.com/2012/11/06/66191/efficient-cary-trash-truck-pushes.html

**Lesson:**

- Using the map below, the teacher will demonstrate a possible truck route that covers all homes within the main (yellow) rectangular area (confined by 34th, Quaker, 42nd, and Slide). Teacher will demonstrate using the scale (in the lower left hand corner) to determine the total length of the truck route and use this length to calculate total gas usage.





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- In groups of three, students will be provided with paper copies (two for each group) or transparency versions (one for each group) of the map above and work together in developing two different routes that would both cover every home in the area. Students will additionally calculate the numerical area of this neighborhood for use later in the lesson.
- Groups should produce an Excel spreadsheet showing routes, route length, and gas mileage for a regular gas truck and an alternative fuel truck.
- Students will then analyze the data in the spreadsheet to compare routes to see which one is the most efficient.
- Each group will present their most efficient route with the class as a whole. This will lead to discussion on the "most" efficient route. The teacher can facilitate by putting each group's data into a spreadsheet visible to the class by a presenter or Smart Board to discover whether a most efficient route exists.
- Students will go to Google Maps (on computer) individually to find a map of their own neighborhood with a similar area numerically as the map used before in order to find and compare various routes and gas requirements for Recycle trucks as done previously and submit to teacher.

**Wrap-Up:**

- Teacher will choose one of the students individual neighborhood routes to display using Google Earth. The teacher will then demonstrate how Google Earth calculates total mileage and use this as a comparison to the students' calculations.

## Assessment:

Teacher will access the students informally during the class activity investigating the efficient routes with the Google Map provided by teacher. Teacher will also be able to informally access the students' ability with Microsoft Excel during their group exploration. The formal assessment of today's lesson is when the individual student had to use their neighborhood route to find the most efficient route. They will need to submit a copy of their map with their most efficient route labeled/highlighted, and they will need to demonstrate their mathematical concepts of total mileage and and gas mileage of their route. Then they will informally present their work to the class. To assess their work, the teacher will create a rubric to identify all parts were completed and math concepts were accurate.(Rubric is attached) The teacher can use Google Earth to make sure their calculations are similar and close.

****For students who do not have a "pick-up" style recycling program in their area, they can modify the above assessment by choosing a nearby city or town that does have a "pick-up" style recycling program.**


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## Math - Problem Solving : Most Efficient Route

Teacher Name:

Student Name: _____

| CATEGORY | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Neatness and Organization | The work is presented in a neat, clear, organized fashion that is easy to read. | The work is presented in a neat and organized fashion that is usually easy to read. | The work is presented in an organized fashion but may be hard to read at times. | The work appears sloppy and unorganized. It is hard to know what information goes together. |
| Mathematical Concepts | Explanation shows complete understanding of the mathematical concepts used to solve the problem(s). | Explanation shows substantial understanding of the mathematical concepts used to solve the problem(s). | Explanation shows some understanding of the mathematical concepts needed to solve the problem(s). | Explanation shows very limited understanding of the underlying concepts needed to solve the problem(s) OR is not written. |
| Mathematical Reasoning | Uses complex and refined mathematical reasoning. | Uses effective mathematical reasoning | Some evidence of mathematical reasoning. | Little evidence of mathematical reasoning. |
| Diagrams and Sketches | Diagrams and/or sketches are clear and greatly add to the reader\'s understanding of the procedure(s). | Diagrams and/or sketches are clear and easy to understand. | Diagrams and/or sketches are somewhat difficult to understand. | Diagrams and/or sketches are difficult to understand or are not used. |
| Mathematical Terminology and Notation | Correct terminology and notation are always used, making it easy to understand what was done. | Correct terminology and notation are usually used, making it fairly easy to understand what was done. | Correct terminology and notation are used, but it is sometimes not easy to understand what was done. | There is little use, or a lot of inappropriate use, of terminology and notation. |



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# Lesson 3: What Truck to Buy? Oh My!

**Strand**
Algebra, Problem Solving, Decision Making, and Integration

**Objective(s):**
*The student will:*

1. Use Internet and possibly other resources to find general costs of Recycle trucks fueled by gasoline and alternate-fueled.
2. Calculate payments for purchasing Recycle trucks using formulas
3. Work with budgets/ budgeting

**Mathematics Performance Expectation(s)**
MPE.1 The student will solve practical problems involving (including numbers in scientific notation), percents, ratios, and proportions.

MPE.2 The student will collect and analyze data, make predictions, and solve real-world problems, using mathematical models.

**NCTM Standards**
- Draw reasonable conclusions about a situation being modeled;
- Build new mathematical knowledge through problem solving
- Solve problems that arise in mathematics and in other contexts

## Introduction: Setting Up the Mathematical Task

- The goal of this lesson is to have students become aware of a budget, interest rates, and what they can afford each month as they are investigating purchasing a Recycle truck.

**Bell-ringer:**

- Have students get the laptops out for research and they may also look through several recent newspapers to find out the cost of a Recycle truck.
    - Student needs to find gasoline fueled Recycle truck price for a used one and a new one.
    - Student needs to find alternative-fueled Recycle truck price for a used one and a new one.
- While the students are working on this research, the teacher will be monitoring their progress as well as putting several budget numbers on pieces of paper and put them in a hat. The budget amount on the paper represents the budget in which that student has for purchasing a Recycle truck for the month. The amounts will range from $2000 to $5000. Each paper will have a different amount on it and it's the student's job to find and purchase a truck that is within their budget.
- Teacher will walk around while students are researching and have each student pick a number out of the hat.


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**Lesson: (TEACHER can copy and paste the following questions into a word document to create a worksheet and add other questions as needed)**

- The teacher will propose the following problem to the students.
    - **When you and your parents go to the car dealership, how do they determine your monthly payments?** Students will write their response to this question in their journals. Then students can volunteer their responses once all students have had a chance to jot down their response.
    - **Given this formula R = $\frac{iP}{1-(1+i)^{-n}}$, ask the students, 'what does the i, P, R, and n stand for?**
    - Teacher will then make sure every student is aware of what the formula represents. Then the teacher will present the following problem for the students to investigate and work through to provide an answer.
        - **You are on the car lot and you want a car that is $20,000; the sales owner said your interest rate is 6% and you want to finish paying for the car in 5 years. How much are your monthly payments with nothing down?**
        - Students may work with a peer or individually to estimate this number. After students obtain a number, teacher will ask them what does this number represent? Is it reasonable? If they pay $386.66 for 5 years, how much do you end up paying on the car?
- The students will now use the prices for the various Recycle trucks in order to figure out their monthly payment given the following scenario. **(This part of the formal assessment may also be copied and pasted into a separate word document as a worksheet for the students)**
    - Interest rate of 5% and for 6 years versus interest rate of 4.5% for 5 years.
    - What Recycle truck will you decide to purchase? Remember to take in account your monthly budget and the amount of money that will be needed to put gas in your truck as you discovered in lesson 2. What would they end up paying for each truck after they finish paying it off?
    - Students will turn in their estimates of each type of Recycle truck with the two scenarios. They will also turn in a typed response as they address what Recycle truck they will purchase.

**Wrap-Up:**

- The students will be asked to write a reflection on this environmental unit. What was their favorite part/concept of the unit, and why? What mathematical concept did you gain the most success in this unit? Is there a reason why it was the concept? What was your least favorite part of the unit, and why? Is there something the teacher could do in the future in order to improve this unit?

**** As an extension, the students could use Excel to provide them with their numerical calculations. The teacher may also be able to talk to a local bank to find current rates and the possible time period of the loan. ****

## Assessments:

The teacher will informally assess the students' knowledge on researching for prices of used and new Recycle trucks, as well as the students' background on Principal and interest rates. If the students don't quite get the example provided in the beginning of the lesson, the teacher can always add another example or 2 to this lesson. The teacher will formally assess their knowledge on this lesson by checking their estimates on the Recycle trucks and their decision as to which truck to purchase. Again the teacher will use a rubric in order to check for accurate mathematical concepts and reasonable conclusions. (See Rubric Below)

## Math - Problem Solving : What Truck to Buy? Oh My!

Teacher Name:

Student Name: _____

| CATEGORY | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Working with Others | Student was an engaged partner, listening to suggestions of others and working cooperatively throughout lesson. | Student was an engaged partner but had trouble listening to others and/or working cooperatively. | Student cooperated with others, but needed prompting to stay on-task. | Student did not work effectively with others. |
| Research | There is strong evidence that research was done on finding cost of various recycle trucks. | There is sufficient evidence that research was done on finding cost of various recycle trucks. | There is some evidence that research was done on finding cost of various recycle trucks. | There is no evidence that research was done on finding cost of various recycle trucks. |
| Mathematical Concepts | Explanation shows complete understanding of the mathematical concepts used to solve the problem(s). | Explanation shows substantial understanding of the mathematical concepts used to solve the problem(s). | Explanation shows some understanding of the mathematical concepts needed to solve the problem(s). | Explanation shows very limited understanding of the underlying concepts needed to solve the problem(s) OR is not written. |
| Mathematical Reasoning | Uses complex and refined mathematical reasoning. | Uses effective mathematical reasoning | Some evidence of mathematical reasoning. | Little evidence of mathematical reasoning. |
| Explanation | Explanation is detailed and clear. | Explanation is clear. | Explanation is a little difficult to understand, but includes critical components. | Explanation is difficult to understand and is missing several components OR was not included. |


Developed by Dr. Agida Manizade & Dr. Laura Jacobsen, Radford University MSP project
in collaboration with
Mr. Michael Bolling, Virginia Department of Education

**HOMEWORK DAY 1 SOLUTIONS**

1. The table shows the amount of carbon dioxide in the Earth's atmosphere for selected years. Predict the amount of carbon dioxide in the Earth's atmosphere in 2013 and 2022. How confident are you in your prediction? You may have to do some research on more up to date statistics on this matter.

| Year | CO(2) in atmosphere (ppm) |
|---|---|
| 1968 | 324.14 |
| 1983 | 343.91 |
| 1998 | 367.68 |
| 2003 | 376.68 |
| 2008 | 385.60 |
| | |

**The scatterplot shows a linear relationship. The prediction equation is y = 1.537x -2702.139. For 2013, the predicted amount of carbon dioxide in atmosphere is 391.842 ppm. Students should feel confident about this prediction because it is not too far away from the data set for years. They can also include current research to argue this point as well (they could use a science teacher for information or do Internet resource…they just need to site their source). For 2022, the predicted amount of carbon dioxide in atmosphere is 405.675 ppm; however, the data point is very outside our data set so to predict that far ahead would be considered extrapolation.**

**2.**Between 1960 and 2003, the size of vehicles in the US have changed yearly. The fuel consumed by these vehicles has changed also. The following table describes the average fuel consumed per year per passenger car in gallons of gasoline.

| Year | 1960 | 1970 | 1980 | 1990 | 1995 | 2000 | 2002 | 2003 |
|---|---|---|---|---|---|---|---|---|
| Gallons consumed per passenger car | 668 | 760 | 576 | 520 | 530 | 547 | 555 | 550 |

**a. students can use any source of technology (calculator, Excel, or by hand) to construct their scatterplot. They need to have both axes labeled with the appropriate variable.**
**b. linear model is best**
**c. y = -4.086x + 8708.321**
**d. 483.202**
**e. answers and explanations will vary here depending on the students' source(s). if using the following website, http://www.epa.gov/otaq/consumer/420f08024.pdf then students may say the predicted amount in part d is reasonable because in 2008 it was researched to be 497.93 gallons per year for passengers cars. So maybe by 2013 it will have decreased more to better mileage on several vehicles now.**


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## DAY 2 FORMAL STUDENT ASSESSMENT SOLUTIONS

| YEAR | # of vehicles |
|---|---|
| 1998 | 295,030 |
| 1999 | 322,302 |
| 2000 | 394,664 |
| 2001 | 425,457 |
| 2002 | 471,098 |
| 2003 | 533,999 |
| 2004 | 565,492 |
| 2005 | 592,122 |
| 2006 | 634,559 |
| 2007 | 695,763 |

a. **Student needs a labeled scatterplot that he or she constructed by hand or using the calculator or Excel.**
b. **It is definitely a linear model as shown in the scatterplot.**
c. **Y = 44016.315x – 87649622.49**
d. **In 2013, according to this mathematical model we should expect 955,220 alternate fueled vehicles.**
e. **In 2018, according to this mathematical model we should expect 1,175,301 alternate fueled vehicles. (students may mention extrapolation because 2018 is way outside of our data set)**
f. **Answers and explanations will vary depending upon the student's source(s) used. If using the following website, http://www.eia.gov/tools/faqs/faq.cfm?id=93&t=4 the students will need to discuss what's wrong with our prediction in d and e. Because according to this website, in 2010 the US had roughly 9 million alternate fueled vehicles. Questions to probe is should the data be modeled by a linear function? Should it be exponential? Why? What happens if it does?**

DATA ON CHINA


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CHINA DATA

NOTES

1. Provincial-level pollution data set of China.

2. In environmental datasheet, the output is 1990 constant price, so all intensities are based upon 1990 constant prices. All other variables associated with money are current prices.

3. T = metric tons

*Environmental data from China's Environmental Yearbooks from the National Environmental Protection Agency.

| Province Name | year | Total Wastewater Discharge (million T) | Total Industrial Waste Water Discharge (million T) | Industrial wastewater discharge intensity (ton/10,000 yuan output) | Total Industrial Waste Water Treated (million T) | Of which: treated by city water treatment plant and centralized treatment facilities (million T) | Total Industrial Waste Water Meeting Discharge Standard (million T) | Industrial COD discharge (ton) |
|---|---|---|---|---|---|---|---|---|
| anhui | 1987 | 1273.05 | 1048.63 | 326.363 | 227.86 | | 335.67 | 402000 |
| anhui | 1988 | 1351.88 | 1089.59 | 299.967 | 287.18 | | 344.399 | 394000 |
| anhui | 1989 | 1275.3 | 1028.4 | 274.049 | 296.12 | | 371.339 | 379935.91 |
| anhui | 1990 | 1272.25 | 986.2 | | 323.12 | | 356.62 | |
| anhui | 1991 | 1293.11 | 976.759 | 229.286 | 597.419 | | 395.779 | 299634 |
| anhui | 1992 | 1309.93 | 973.179 | 192.708 | 663.33 | 161.789 | 388.67 | 385000 |
| anhui | 1993 | 1271.29 | 870.48 | 156.276 | 673.09 | 3.88 | 428.43 | 282293.65 |
| anhui | 1994 | 1224.44 | 815.1 | 121.053 | 746.21 | 0 | 387.62 | 294924 |
| anhui | 1995 | 1410.31 | 870.059 | 116.593 | 737.95 | 8.6 | 407.449 | 310100.94 |
| beijing | 1987 | 798.48 | 444.899 | 82.0728 | 123.989 | | 190.91 | 106000 |
| beijing | 1988 | 858.5 | 390.009 | 67.3639 | 115.819 | | 183.81 | 117000 |
| beijing | 1989 | 851.83 | 399.11 | 65.2768 | 114.37 | | 205.9 | 104484.38 |
| beijing | 1990 | 837.11 | 406.41 | | 128.15 | | 208.12 | |
| beijing | 1991 | 841.7 | 415.48 | 72.1319 | 495.23 | 5.51 | 264.18 | 98285 |
| beijing | 1992 | 887.25 | 396.819 | 67.0304 | 457.69 | 21.8799 | 254.28 | 103000 |
| beijing | 1993 | 969.83 | 391.73 | 60.5077 | 640.34 | 33.3299 | 242.599 | 88638.729 |
| beijing | 1994 | 962.49 | 370.209 | 57.4221 | 694.929 | 6.44 | 258.6 | 77911.96 |
| beijing | 1995 | 961.5 | 369.97 | 51.338 | 735.85 | 4.8 | 243.37 | 73234.8 |
| fujian | 1987 | 998.539 | 748.59 | 319.576 | 181.97 | | 172.789 | 228000 |

CHINA DATA

| Province Name | year | Industrial COD discharge intensity (ton/million yuan output) | waste gas emission (billion m3) | Waste gas emission intensity (m3/yuan output) | industrial waste gas emission (billion m3) | Industrial waste gas emission intensity (m3/yuan output) | SO2 discharge (ton) | SO2 discharge intensity (ton/million yuan output) |
|---|---|---|---|---|---|---|---|---|
| anhui | 1987 | 12.51139 | 304.5 | 9.47691 | | | 305000 | 9.49247 |
| anhui | 1988 | 10.846858 | 319.899 | 8.80687 | | | 333000 | 9.16752 |
| anhui | 1989 | 10.124603 | 247.099 | 6.58476 | | | 407760 | 10.866 |
| anhui | 1990 | | 232.699 | | | | 380000 | |
| anhui | 1991 | 7.0336619 | 268.5 | 6.30281 | 231.599 | 5.43661 | 380000 | 8.92018 |
| anhui | 1992 | 7.6237623 | 298.8 | 5.91683 | 261.699 | 5.18217 | 420266 | 8.32209 |
| anhui | 1993 | 5.0679768 | 313.1 | 5.62103 | 269 | 4.82931 | 443615 | 7.96415 |
| anhui | 1994 | 4.3800153 | 316.3 | 4.69747 | 288.899 | 4.29055 | 393307 | 5.84113 |
| anhui | 1995 | 4.1555416 | 436.5 | 5.84936 | 355.899 | 4.76927 | 492482 | 6.59955 |
| beijing | 1987 | 1.9554323 | 266.6 | 4.91809 | | | 336000 | 6.19835 |
| beijing | 1988 | 2.0208677 | 198.8 | 3.43374 | | | 171000 | 2.95357 |
| beijing | 1989 | 1.708906 | 275.899 | 4.51251 | | | 343905 | 5.62477 |
| beijing | 1990 | | 277 | | | | 340000 | |
| beijing | 1991 | 1.7063368 | 306.199 | 5.31597 | 240.099 | 4.1684 | 370000 | 6.42361 |
| beijing | 1992 | 1.7398648 | 303.899 | 5.13344 | 246.599 | 4.16554 | 369245 | 6.23724 |
| beijing | 1993 | 1.369139 | 308.5 | 4.76517 | 259.5 | 4.00831 | 366285 | 5.65774 |
| beijing | 1994 | 1.2084696 | 310.6 | 4.81762 | 271.399 | 4.2096 | 352404 | 5.46603 |
| beijing | 1995 | 1.0162266 | 336 | 4.66243 | 291 | 4.03799 | 382925 | 5.31357 |
| fujian | 1987 | 9.7334237 | 121.8 | 5.19969 | | | 120000 | 5.12285 |

CHINA DATA

| Province Name | year | Industrial SO2 discharge | Industrial SO2 discharge intensity (ton/million yuan output) | Total smoke discharge (ton) | smoke discharge intensity (ton/million yuan output) | Industrial Smoke discharge | Industrial smoke discharge intensity (ton/million yuan output) | industrial smoke treatment( ton) |
|---|---|---|---|---|---|---|---|---|
| anhui | 1987 | | | 434000 | 13.5073 | | | |
| anhui | 1988 | | | 479000 | 13.1869 | | | |
| anhui | 1989 | | | 453369 | 12.0814 | | | |
| anhui | 1990 | | | 310000 | | | | |
| anhui | 1991 | 320000 | 7.51173 | 390000 | 9.15492 | 270000 | 6.33802 | 1664390 |
| anhui | 1992 | 316408 | 6.2655 | 359062 | 7.11013 | 256737 | 5.0839 | 3117703 |
| anhui | 1993 | 340557 | 6.11397 | 640613 | 11.5008 | 243075 | 4.36388 | 3590045 |
| anhui | 1994 | 309957 | 4.60327 | 494292 | 7.34089 | 226720 | 3.36709 | 3698438 |
| anhui | 1995 | 351161 | 4.70577 | 632335 | 8.47367 | 260403 | 3.48955 | 2665075 |
| beijing | 1987 | | | 433000 | 7.98775 | | | |
| beijing | 1988 | | | 118000 | 2.03814 | | | |
| beijing | 1989 | | | 250945 | 4.10435 | | | |
| beijing | 1990 | | | 250000 | | | | |
| beijing | 1991 | 210000 | 3.64583 | 390000 | 6.77083 | 100000 | 1.73611 | 1353252 |
| beijing | 1992 | 200191 | 3.3816 | 265293 | 4.4813 | 105465 | 1.7815 | 1351129 |
| beijing | 1993 | 203736 | 3.14696 | 261480 | 4.03889 | 109402 | 1.68985 | 1101014 |
| beijing | 1994 | 175616 | 2.72392 | 263026 | 4.07971 | 126453 | 1.96137 | 1190598 |
| beijing | 1995 | 214899 | 2.98199 | 278706 | 3.8674 | 124471 | 1.72719 | 1686043 |
| fujian | 1987 | | | 138000 | 5.89128 | | | |

CHINA DATA

| Province Name | year | Industrial dust discharge (ton) | Industrial dust discharge intensity (ton/million yuan output) | industrial dust recovery (ton) | Output Value of Waste Recycling (million yuan) | Coal Consumption (million T) | No. of Enterprises in Sample of Envir Data | Total Value of Industrial Output from sampling enterprises (million yuan)(1990 constant price, an index of 1.684 is used converting 1980 price to 1990) |
|---|---|---|---|---|---|---|---|---|
| anhui | 1987 | 330000 | 10.2705 | 420000 | 101.44 | 21.66 | 2538 | 32130.7 |
| anhui | 1988 | 490000 | 13.4897 | 570000 | 143.289 | 23.93 | 2145 | 36323.8 |
| anhui | 1989 | 290000 | 7.72797 | 430000 | 153.61 | 24.7199 | 2121 | 37526 |
| anhui | 1990 | 290000 | | | 194.009 | | | |
| anhui | 1991 | 340000 | 7.98122 | 625802 | 217.449 | 22.8099 | 2155 | 42600 |
| anhui | 1992 | 234661 | 4.64675 | 361435 | 357.411 | 24.01 | 2114 | 50500 |
| anhui | 1993 | 198379 | 3.56146 | 738830 | 359.125 | 25.68 | 1979 | 55701.4 |
| anhui | 1994 | 216100 | 3.20937 | 827399 | 398.336 | 27.8599 | 2112 | 67334 |
| anhui | 1995 | 219742 | 2.94467 | 1005748 | 513.726 | 30.41 | 2184 | 74623.4 |
| beijing | 1987 | 90000 | 1.66027 | 510000 | 53.1499 | 21.5799 | 1666 | 54207.9 |
| beijing | 1988 | 70000 | 1.20906 | 720000 | 153.13 | 13.96 | 1628 | 57895.9 |
| beijing | 1989 | 80000 | 1.30844 | 570000 | 130.15 | 23.91 | 1580 | 61141 |
| beijing | 1990 | 70000 | | | 131.319 | | | |
| beijing | 1991 | 70000 | 1.21527 | 605450 | 268.74 | 15.15 | 1396 | 57600 |
| beijing | 1992 | 77162 | 1.30341 | 415415 | 248.132 | 15.18 | 1201 | 59200 |
| beijing | 1993 | 64446 | 0.99545 | 516873 | 279.795 | 15.48 | 1173 | 64740.4 |
| beijing | 1994 | 58903 | 0.91362 | 516735 | 293.959 | 29.41 | 1123 | 64471.5 |
| beijing | 1995 | 62609 | 0.86878 | 530815 | 378.448 | 16.8999 | 1128 | 72065.4 |
| fujian | 1987 | 160000 | 6.83047 | 310000 | 83.84 | 9.26 | 2460 | 23424.4 |

CHINA DATA

| Province Name | year | # of Enterprises paying for pollution discharge | Total pollution discharge fee collected (total levy; million yuan) | levy on waste water (million yuan) | levy on waste gas(million yuan) | levy on sewage water (million yuan) | Total # of environmental accidents | Compensation for environmental accidents (million yuan) |
|---|---|---|---|---|---|---|---|---|
| anhui | 1987 | 1976 | 39.9799 | 25.53 | 8.16 | | 83 | 1.38 |
| anhui | 1988 | 2240 | 47.3999 | 30 | 11.1 | | 152 | 2.82 |
| anhui | 1989 | 2433 | 51.99 | 33.03 | 11.6 | | 103 | 2.84 |
| anhui | 1990 | 2438 | 58.031 | | | | | |
| anhui | 1991 | 2621 | 59.8539 | | | 0.064 | 125 | 0.547 |
| anhui | 1992 | 2892 | 73.563 | 45.9889 | 13.2609 | 0.141 | 160 | 1.433 |
| anhui | 1993 | 3180 | 81.246 | 51.185 | 14.2809 | 0.114 | 107 | 1.35 |
| anhui | 1994 | 3647 | 94.6929 | 60.3739 | 14.7929 | 2.137 | 154 | 1.718 |
| anhui | 1995 | 3932 | 107.515 | 69.257 | 15.919 | 3.089 | 119 | 1.966 |
| beijing | 1987 | 2528 | 35.7899 | 24.14 | 7.71 | | 20 | 0.44 |
| beijing | 1988 | 2607 | 41.1499 | 28.73 | 8.23 | | 7 | 0.11 |
| beijing | 1989 | 4034 | 35.82 | 22.57 | 7.58 | | 4 | 0.07 |
| beijing | 1990 | 3276 | 33.801 | | | | | |
| beijing | 1991 | 2454 | 39.975 | | | | 9 | 1.235 |
| beijing | 1992 | 3422 | 43.552 | 23.1559 | 11.909 | 0 | 1 | 0 |
| beijing | 1993 | 3915 | 47.093 | 23.061 | 13.01 | 0 | 0 | 0 |
| beijing | 1994 | 4539 | 55.1439 | 27.427 | 13.8809 | 0 | 4 | 0.034 |
| beijing | 1995 | 5807 | 79.256 | 42.0769 | 14.294 | 0 | 3 | 0.108 |
| fujian | 1987 | 2008 | 27 | 18.51 | 5.61 | | 94 | 1.23 |

CHINA DATA

| Province Name | year | Fine for environmental accidents (million yuan) | # of pollution complaint letters governments received | # of pollution complaint letters governments responded | # of citizen-visits to government offices for environmental issues |
|---|---|---|---|---|---|
| anhui | 1987 | 0.1 | 1127 | | 993 |
| anhui | 1988 | 0.09 | 1341 | | 1549 |
| anhui | 1989 | 2.7 | 1027 | | 1319 |
| anhui | 1990 | | 1137 | | 1669 |
| anhui | 1991 | 0.291 | 1116 | 1014 | 1213 |
| anhui | 1992 | 0.064 | 989 | 845 | 1872 |
| anhui | 1993 | 0.062 | 1001 | 912 | 1986 |
| anhui | 1994 | 0.14 | 985 | 935 | 2598 |
| anhui | 1995 | 0.069 | 1158 | 1064 | 2238 |
| beijing | 1987 | 0.01 | 2188 | | 875 |
| beijing | 1988 | 0.04 | 2022 | | 1141 |
| beijing | 1989 | 0.77 | 1737 | | 845 |
| beijing | 1990 | | 2192 | | 891 |
| beijing | 1991 | 0.138 | 2648 | 2038 | 652 |
| beijing | 1992 | 0 | 1782 | 1769 | 855 |
| beijing | 1993 | 0 | 2041 | 2037 | 951 |
| beijing | 1994 | 0.045 | 2112 | 2019 | 2362 |
| beijing | 1995 | 0.119 | 3835 | 3811 | 2026 |
| fujian | 1987 | 0.38 | 1746 | | 1194 |

CHINA DATA

| Province Name | year | Total Wastewater Discharge (million T) | Total Industrial Waste Water Discharge (million T) | Industrial wastewater discharge intensity (ton/10,000 yuan output) | Total Industrial Waste Water Treated (million T) | Of which: treated by city water treatment plant and centralized treatment facilities (million T) | Total Industrial Waste Water Meeting Discharge Standard (million T) | Industrial COD discharge (ton) |
|---|---|---|---|---|---|---|---|---|
| fujian | 1988 | 991.649 | 759.639 | 251.025 | 222.539 | | 190.599 | 216000 |
| fujian | 1989 | 1008.51 | 745.24 | 243.036 | 244.77 | | 226.38 | 232472.64 |
| fujian | 1990 | 1081.29 | 762.169 | | 275.18 | | 242.88 | |
| fujian | 1991 | 914.44 | 657.039 | 194.967 | 271.949 | 12.88 | 204.19 | 186953 |
| fujian | 1992 | 751.059 | 634.08 | 150.971 | 335.779 | 21.4499 | 239.03 | 185000 |
| fujian | 1993 | 943.389 | 573.159 | 83.0939 | 400.72 | 21.02 | 233.16 | 183135.1 |
| fujian | 1994 | 941.669 | 606.71 | 92.334 | 439.889 | 25.1 | 232.99 | 232202.91 |
| fujian | 1995 | 1048.54 | 663.809 | 86.7341 | 429.829 | 28.3599 | 274.819 | 218042.48 |
| gansu | 1987 | 484.089 | 393.13 | 223.825 | 88.45 | | 184.77 | 51000 |
| gansu | 1988 | 488.73 | 407.329 | 220.293 | 97.76 | | 195.52 | 48000 |
| gansu | 1989 | 449.16 | 365.12 | 172.477 | 105.4 | | 150.139 | 88562 |
| gansu | 1990 | 461.74 | 383.75 | | 125.38 | | 138.819 | |
| gansu | 1991 | 469.05 | 371.949 | 153.065 | 192.27 | 46.5499 | 136.02 | 60038 |
| gansu | 1992 | 469.279 | 375.62 | 154.576 | 227.949 | 42.84 | 144.069 | 63000 |
| gansu | 1993 | 451.199 | 362.98 | 150.57 | 254.55 | 39.3599 | 162.449 | 37007.29 |
| gansu | 1994 | 459.91 | 363.87 | 122.394 | 276.42 | 52.5399 | 178.069 | 44504.199 |
| gansu | 1995 | 480.94 | 383.93 | 122.328 | 318.889 | 50.4099 | 181.36 | 60533.47 |
| guangdong | 1987 | 2240.79 | 1433.71 | 195.582 | 495.16 | | 680.82 | 578000 |
| guangdong | 1988 | 2319.57 | 1372.51 | 155.897 | 496.829 | | 689.299 | 379000 |
| guangdong | 1989 | 2431.59 | 1469 | 141.286 | 531.57 | | 734.46 | 323819.21 |
| guangdong | 1990 | 2512.61 | 1402.5 | | 589.94 | | 660.289 | |
| guangdong | 1991 | 2510.9 | 1392.24 | 107.508 | 812 | 17.8799 | 674.549 | 381484 |
| guangdong | 1992 | 2688.51 | 1419.39 | 82.2358 | 920.179 | 31.6099 | 711.289 | 369000 |
| guangdong | 1993 | 2960.26 | 1397.61 | 64.7045 | 985.12 | 26.07 | 712.519 | 328043 |
| guangdong | 1994 | 3372.07 | 1315.3 | 53.8291 | 1245.21 | 17.35 | 719.299 | 327631 |
| guangdong | 1995 | 3489.36 | 1282.58 | 42.9819 | 1173.33 | 15.58 | 722.559 | 349802 |
| guangxi | 1987 | 1340.55 | 1071.76 | 694.8 | 271.839 | | 394.089 | 317000 |
| guangxi | 1988 | 1418.95 | 1098.31 | 641.306 | 299.5 | | 399.209 | 288000 |
| guangxi | 1989 | 1349.96 | 977.299 | 510.809 | 343.389 | | 409.089 | 235174.35 |
| guangxi | 1990 | 1388.89 | 1052.48 | | 503.38 | | 515.23 | |
| guangxi | 1991 | 1399.49 | 928.559 | 380.557 | 633.759 | 5.21 | 498.259 | 383623 |

CHINA DATA

| Province Name | year | Industrial COD discharge intensity (ton/million yuan output) | waste gas emission (billion m3) | Waste gas emission intensity (m3/yuan output) | industrial waste gas emission (billion m3) | Industrial waste gas emission intensity (m3/yuan output) | SO2 discharge (ton) | SO2 discharge intensity (ton/million yuan output) |
|---|---|---|---|---|---|---|---|---|
| fujian | 1988 | 7.137787 | 136.8 | 4.52059 | | | 137000 | 4.5272 |
| fujian | 1989 | 7.5813707 | 136.9 | 4.46456 | | | 129465 | 4.22209 |
| fujian | 1990 | | 134.699 | | | | 120000 | |
| fujian | 1991 | 5.5475667 | 158.9 | 4.71513 | 133.9 | 3.97329 | 160000 | 4.74777 |
| fujian | 1992 | 4.4047619 | 185.8 | 4.4238 | 175 | 4.16666 | 140252 | 3.33933 |
| fujian | 1993 | 2.6550027 | 182.5 | 2.64579 | 159.3 | 2.30945 | 183748 | 2.66388 |
| fujian | 1994 | 3.5338535 | 192.8 | 2.93418 | 189.699 | 2.887 | 151814 | 2.31042 |
| fujian | 1995 | 2.8489682 | 254.5 | 3.32532 | 194 | 2.53482 | 166593 | 2.17672 |
| gansu | 1987 | 2.9036467 | 221.3 | 12.5995 | | | 313000 | 17.8204 |
| gansu | 1988 | 2.5959529 | 237.3 | 12.8337 | | | 329000 | 17.793 |
| gansu | 1989 | 4.1835453 | 164.9 | 7.78964 | | | 350357 | 16.5503 |
| gansu | 1990 | | 182 | | | | 360000 | |
| gansu | 1991 | 2.4706995 | 230 | 9.46502 | 203.5 | 8.37448 | 340000 | 13.9917 |
| gansu | 1992 | 2.5925925 | 250.5 | 10.3086 | 212.099 | 8.72839 | 354162 | 14.5745 |
| gansu | 1993 | 1.5351275 | 246.3 | 10.2169 | 219.099 | 9.08865 | 389354 | 16.151 |
| gansu | 1994 | 1.4969795 | 248.099 | 8.34529 | 221.9 | 7.464 | 374472 | 12.596 |
| gansu | 1995 | 1.9287247 | 280.699 | 8.94369 | 242.5 | 7.72656 | 421624 | 13.4338 |
| guangdong | 1987 | 7.8849162 | 272.8 | 3.72146 | | | 347000 | 4.73367 |
| guangdong | 1988 | 4.3048848 | 302.399 | 3.43482 | | | 384000 | 4.36167 |
| guangdong | 1989 | 3.1144491 | 305.3 | 2.93633 | | | 417650 | 4.0169 |
| guangdong | 1990 | | 358.6 | | | | 400000 | |
| guangdong | 1991 | 2.9458223 | 461.5 | 3.5637 | 461.5 | 3.5637 | 480000 | 3.70656 |
| guangdong | 1992 | 2.137891 | 519.299 | 3.00869 | 498 | 2.88528 | 512442 | 2.96895 |
| guangdong | 1993 | 1.5187149 | 606 | 2.80555 | 583.899 | 2.70323 | 542779 | 2.51286 |
| guangdong | 1994 | 1.340833 | 669.799 | 2.74116 | 650.1 | 2.66054 | 607378 | 2.4857 |
| guangdong | 1995 | 1.1722514 | 663.6 | 2.22384 | 647.6 | 2.17022 | 560089 | 1.87696 |
| guangxi | 1987 | 20.550467 | 134.699 | 8.73232 | | | 413000 | 26.7739 |
| guangxi | 1988 | 16.816261 | 144.599 | 8.44316 | | | 497000 | 29.0197 |
| guangxi | 1989 | 12.291956 | 129.099 | 6.74772 | | | 591153 | 30.898 |
| guangxi | 1990 | | 138.9 | | | | 600000 | |
| guangxi | 1991 | 15.722254 | 161.699 | 6.62704 | 143.5 | 5.88114 | 560000 | 22.9508 |

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| Province Name | year | Industrial SO2 discharge | Industrial SO2 discharge intensity (ton/million yuan output) | Total smoke discharge (ton) | smoke discharge intensity (ton/million yuan output) | Industrial Smoke discharge | Industrial smoke discharge intensity (ton/million yuan output) | industrial smoke treatment( ton) |
|---|---|---|---|---|---|---|---|---|
| fujian | 1988 | | | 145000 | 4.79157 | | | |
| fujian | 1989 | | | 105037 | 3.42545 | | | |
| fujian | 1990 | | | 100000 | | | | |
| fujian | 1991 | 110000 | 3.26409 | 210000 | 6.23145 | 80000 | 2.37388 | 978195 |
| fujian | 1992 | 118652 | 2.82504 | 72074 | 1.71604 | 66674 | 1.58747 | 1430292 |
| fujian | 1993 | 154015 | 2.23283 | 80021 | 1.1601 | 71656 | 1.03883 | 1478393 |
| fujian | 1994 | 127249 | 1.93657 | 373242 | 5.6803 | 85972 | 1.30839 | 1640563 |
| fujian | 1995 | 143335 | 1.87283 | 122830 | 1.60491 | 89562 | 1.17022 | 1546224 |
| gansu | 1987 | | | 155000 | 8.8248 | | | |
| gansu | 1988 | | | 176000 | 9.51849 | | | |
| gansu | 1989 | | | 205544 | 9.70961 | | | |
| gansu | 1990 | | | 200000 | | | | |
| gansu | 1991 | 280000 | 11.5226 | 210000 | 8.64197 | 130000 | 5.34979 | 634507 |
| gansu | 1992 | 304770 | 12.5419 | 212136 | 8.72987 | 135997 | 5.59658 | 813613 |
| gansu | 1993 | 337805 | 14.0127 | 206508 | 8.56631 | 149103 | 6.18505 | 1140166 |
| gansu | 1994 | 322778 | 10.8572 | 255063 | 8.5795 | 167706 | 5.64109 | 1246662 |
| gansu | 1995 | 346682 | 11.046 | 366476 | 11.6767 | 178283 | 5.68047 | 1492733 |
| guangdong | 1987 | | | 291000 | 3.96974 | | | |
| guangdong | 1988 | | | 263000 | 2.98729 | | | |
| guangdong | 1989 | | | 219263 | 2.10884 | | | |
| guangdong | 1990 | | | 220000 | | | | |
| guangdong | 1991 | 430000 | 3.32046 | 240000 | 1.85328 | 220000 | 1.69884 | 3591145 |
| guangdong | 1992 | 468187 | 2.71255 | 252989 | 1.46575 | 228104 | 1.32157 | 3303463 |
| guangdong | 1993 | 508004 | 2.35186 | 263703 | 1.22084 | 242936 | 1.1247 | 3983027 |
| guangdong | 1994 | 581360 | 2.37922 | 306449 | 1.25414 | 285567 | 1.16868 | 4211436 |
| guangdong | 1995 | 534998 | 1.79287 | 230310 | 0.77181 | 208113 | 0.69742 | 4443247 |
| guangxi | 1987 | | | 380000 | 24.6346 | | | |
| guangxi | 1988 | | | 387000 | 22.5968 | | | |
| guangxi | 1989 | | | 277819 | 14.5208 | | | |
| guangxi | 1990 | | | 300000 | | | | |
| guangxi | 1991 | 510000 | 20.9016 | 290000 | 11.8852 | 230000 | 9.42622 | 2206415 |

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| Province Name | year | Industrial dust discharge (ton) | Industrial dust discharge intensity (ton/million yuan output) | industrial dust recovery (ton) | Output Value of Waste Recycling (million yuan) | Coal Consumption (million T) | No. of Enterprises in Sample of Envir Data | Total Value of Industrial Output from sampling enterprises (million yuan)(1990 constant price, an index of 1.684 is used converting 1980 price to 1990) |
|---|---|---|---|---|---|---|---|---|
| fujian | 1988 | 180000 | 5.94815 | 680000 | 128.479 | 10.1 | 2560 | 30261.4 |
| fujian | 1989 | 160000 | 5.2179 | 340000 | 217.21 | 11.69 | 2664 | 30663.6 |
| fujian | 1990 | 160000 | | | 206.729 | | | |
| fujian | 1991 | 120000 | 3.56083 | 341686 | 242.55 | 9.59 | 2513 | 33700 |
| fujian | 1992 | 114803 | 2.7334 | 426988 | 308.63 | 9.57 | 2413 | 42000 |
| fujian | 1993 | 151192 | 2.1919 | 415961 | 285.12 | 11.2799 | 2836 | 68977.3 |
| fujian | 1994 | 179210 | 2.72736 | 463408 | 412.568 | 12.52 | 3008 | 65708.1 |
| fujian | 1995 | 217095 | 2.83658 | 575350 | 506.67 | 13.23 | 3143 | 76533.8 |
| gansu | 1987 | 360000 | 20.4963 | 140000 | 33.8299 | 14 | 1438 | 17564.1 |
| gansu | 1988 | 310000 | 16.7655 | 370000 | 82.1599 | 16 | 1272 | 18490.3 |
| gansu | 1989 | 390000 | 18.423 | 450000 | 91.9399 | 11.76 | 1108 | 21169.1 |
| gansu | 1990 | 150000 | | | 119.62 | | | |
| gansu | 1991 | 100000 | 4.11522 | 547602 | 147.88 | 11.19 | 1013 | 24300 |
| gansu | 1992 | 111210 | 4.57654 | 383110 | 235.642 | 12.6199 | 1081 | 24300 |
| gansu | 1993 | 141437 | 5.86705 | 784262 | 247.315 | 13.6099 | 1141 | 24106.9 |
| gansu | 1994 | 109183 | 3.67256 | 631539 | 317.23 | 15.1199 | 1076 | 29729.3 |
| gansu | 1995 | 122061 | 3.88912 | 675104 | 402.816 | 15.47 | 1070 | 31385.2 |
| guangdong | 1987 | 350000 | 4.7746 | 620000 | 191.38 | 17.07 | 4212 | 73304.5 |
| guangdong | 1988 | 460000 | 5.22492 | 680000 | 239.05 | 20.01 | 3955 | 88039.5 |
| guangdong | 1989 | 420000 | 4.0395 | 940000 | 237.91 | 21.3599 | 4565 | 103973 |
| guangdong | 1990 | 420000 | | | 316.24 | | | |
| guangdong | 1991 | 380000 | 2.93436 | 1280901 | 634.659 | 23.68 | 5293 | 129500 |
| guangdong | 1992 | 390493 | 2.26241 | 1533929 | 532.84 | 26.14 | 5397 | 172600 |
| guangdong | 1993 | 531514 | 2.4607 | 1724292 | 864.259 | 30.75 | 6401 | 216000 |
| guangdong | 1994 | 565432 | 2.31403 | 2150883 | 939.429 | 33.8699 | 7218 | 244348 |
| guangdong | 1995 | 641727 | 2.15054 | 2299298 | 1294.18 | 33.13 | 7874 | 298401 |
| guangxi | 1987 | 810000 | 52.5106 | 660000 | 97.42 | 14.34 | 1051 | 15425.4 |
| guangxi | 1988 | 2070000 | 120.866 | 1580000 | 124.73 | 15.74 | 1090 | 17126.2 |
| guangxi | 1989 | 730000 | 38.1552 | 870000 | 115.819 | 13.73 | 1137 | 19132.3 |
| guangxi | 1990 | 210000 | | | 173.979 | | | |
| guangxi | 1991 | 180000 | 7.37704 | 797883 | 410.399 | 13.85 | 1214 | 24400 |

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| Province Name | year | # of Enterprises paying for pollution discharge | Total pollution discharge fee collected (total levy; million yuan) | levy on waste water (million yuan) | levy on waste gas(million yuan) | levy on sewage water (million yuan) | Total # of environmental accidents | Compensation for environmental accidents (million yuan) |
|---|---|---|---|---|---|---|---|---|
| fujian | 1988 | 2599 | 30.9499 | 20.02 | 6.62 | | 109 | 1.34 |
| fujian | 1989 | 3023 | 34.6899 | 21.92 | 7.03 | | 47 | 0.99 |
| fujian | 1990 | 3993 | 41.155 | | | | | |
| fujian | 1991 | 6711 | 50.4699 | | | 0.03 | 60 | 0.194 |
| fujian | 1992 | 9708 | 77.75 | 42.5399 | 10.27 | 7.7 | 43 | 0.34 |
| fujian | 1993 | 11484 | 93.762 | 39.951 | 14.3379 | 11.885 | 35 | 0.51 |
| fujian | 1994 | 14948 | 108.792 | 41.7119 | 18.6969 | 13.298 | 34 | 0.183 |
| fujian | 1995 | 22060 | 141.408 | 52.957 | 23.885 | 17.495 | - | - |
| gansu | 1987 | 1628 | 19.05 | 7.5 | 10.41 | | 14 | 0.2 |
| gansu | 1988 | 1959 | 20.57 | 6.29 | 12.07 | | 21 | 0.4 |
| gansu | 1989 | 2209 | 21.9899 | 8 | 11.68 | | 15 | 0.47 |
| gansu | 1990 | 2532 | 27.9869 | | | | | |
| gansu | 1991 | 2637 | 28.2769 | | | 0.026 | 39 | 0.519 |
| gansu | 1992 | 2898 | 31.7669 | 12.3509 | 14.058 | 0.097 | 33 | 0.384 |
| gansu | 1993 | 3632 | 39.513 | 14.208 | 17.164 | 0.13 | 39 | 0.896 |
| gansu | 1994 | 5254 | 47.2389 | 15.83 | 18.573 | 4.316 | 49 | 0.676 |
| gansu | 1995 | 7088 | 68.7849 | 18.8409 | 32.6409 | 5.808 | - | - |
| guangdong | 1987 | 8729 | 72.78 | 40.42 | 16.27 | | 211 | 5.5 |
| guangdong | 1988 | 9935 | 80.7399 | 42.8299 | 16.84 | | 159 | 6.16 |
| guangdong | 1989 | 13013 | 90.73 | 47.09 | 17.34 | | 243 | 7.56 |
| guangdong | 1990 | 12457 | 102.375 | | | | | |
| guangdong | 1991 | 21368 | 156.22 | | | | 227 | 2.8 |
| guangdong | 1992 | 26055 | 211.169 | 100.27 | 25.19 | 0 | 220 | 27.3999 |
| guangdong | 1993 | 28978 | 270.649 | 117.62 | 28.9499 | 0 | 182 | 2.55 |
| guangdong | 1994 | 40756 | 371.913 | 135.531 | 56.4889 | 4.808 | 229 | 5.13 |
| guangdong | 1995 | 47022 | 459.526 | 146.002 | 81.156 | 21.059 | 125 | 3.973 |
| guangxi | 1987 | 1215 | 26.55 | 18.57 | 5.73 | | 270 | 1.42 |
| guangxi | 1988 | 1287 | 32.32 | 21.71 | 8.34 | | 277 | 2.39 |
| guangxi | 1989 | 1521 | 39.5799 | 26.41 | 8.69999 | | 233 | 2.33 |
| guangxi | 1990 | 1294 | 4.208 | | | | | |
| guangxi | 1991 | 1905 | 49.483 | | | 0.001 | 188 | 0.968 |

CHINA DATA

| Province Name | year | Fine for environmental accidents (million yuan) | # of pollution complaint letters governments received | # of pollution complaint letters governments responded | # of citizen-visits to government offices for environmental issues |
|---|---|---|---|---|---|
| fujian | 1988 | 0.21 | 1012 | | 782 |
| fujian | 1989 | 0.29 | 1309 | | 1326 |
| fujian | 1990 | | 1284 | | 2919 |
| fujian | 1991 | 0.025 | 1305 | 1080 | 2399 |
| fujian | 1992 | 0.05 | 1682 | 1489 | 1840 |
| fujian | 1993 | 0.104 | 1468 | 1345 | 2026 |
| fujian | 1994 | 0.09 | 1937 | 1318 | 1915 |
| fujian | 1995 | - | 1445 | 1348 | 454 |
| gansu | 1987 | 0.24 | 196 | | 169 |
| gansu | 1988 | 0.31 | 327 | | 278 |
| gansu | 1989 | 0.35 | 398 | | 307 |
| gansu | 1990 | | 376 | | 374 |
| gansu | 1991 | 0.124 | 370 | 314 | 431 |
| gansu | 1992 | 0.102 | 360 | 318 | 376 |
| gansu | 1993 | 0.228 | 382 | 359 | 729 |
| gansu | 1994 | 0.183 | 567 | 458 | 901 |
| gansu | 1995 | - | 333 | 317 | 1168 |
| guangdong | 1987 | 0.87 | 8096 | | 4637 |
| guangdong | 1988 | 0.57 | 6552 | | 3723 |
| guangdong | 1989 | 0.81 | 6897 | | 3896 |
| guangdong | 1990 | | 8576 | | 5692 |
| guangdong | 1991 | 0.11 | 8363 | 7728 | 5099 |
| guangdong | 1992 | 0.28 | 9050 | 8486 | 5267 |
| guangdong | 1993 | 0.17 | 8891 | 8175 | 6041 |
| guangdong | 1994 | 1.45 | 9556 | 9005 | 5037 |
| guangdong | 1995 | 0.368 | 8924 | 8422 | 3963 |
| guangxi | 1987 | 0.26 | 2071 | | 2776 |
| guangxi | 1988 | 0.18 | 1659 | | 2200 |
| guangxi | 1989 | 0.18 | 1237 | | 2680 |
| guangxi | 1990 | | 1402 | | 3458 |
| guangxi | 1991 | 0.18 | 1604 | 1510 | 3516 |

CHINA DATA

| Province Name | year | Total Wastewater Discharge (million T) | Total Industrial Waste Water Discharge (million T) | Industrial wastewater discharge intensity (ton/10,000 yuan output) | Total Industrial Waste Water Treated (million T) | Of which: treated by city water treatment plant and centralized treatment facilities (million T) | Total Industrial Waste Water Meeting Discharge Standard (million T) | Industrial COD discharge (ton) |
|---|---|---|---|---|---|---|---|---|
| guangxi | 1992 | 1389.84 | 937.659 | 284.139 | 612.48 | 7.87 | 461.319 | 423000 |
| guangxi | 1993 | 1445.38 | 931.58 | 247.138 | 618.289 | 8.21 | 450.62 | 512985 |
| guangxi | 1994 | 1470.52 | 898.87 | 208.484 | 700.82 | 7.48 | 401.97 | 526957.82 |
| guangxi | 1995 | 1601.34 | 965.63 | 197.164 | 744 | 7.88 | 422.269 | 731027.69 |
| guizhou | 1987 | 618.99 | 472.92 | 318.042 | 116.709 | | 146.889 | 77000 |
| guizhou | 1988 | 628.769 | 492.62 | 301.888 | 120.04 | | 182.61 | 132000 |
| guizhou | 1989 | 533.919 | 366.73 | 205.062 | 114.959 | | 172.77 | 78807.009 |
| guizhou | 1990 | 525.44 | 342.24 | | 108.5 | | 143.02 | |
| guizhou | 1991 | 470.81 | 297.19 | 153.984 | 225.62 | 0.05 | 121.489 | 28256 |
| guizhou | 1992 | 454.329 | 289.259 | 119.037 | 327.18 | 0.11 | 117.3 | 54000 |
| guizhou | 1993 | 409.13 | 258.54 | 102.939 | 338.3 | 0.08 | 121.3 | 60176 |
| guizhou | 1994 | 408.589 | 276.69 | 102.759 | 385.91 | 0.02 | 110.51 | 46208 |
| guizhou | 1995 | 436.079 | 282.06 | 100.266 | 410.449 | 0.14 | 110.33 | 44214 |
| hainan | 1987 | | | | | | | |
| hainan | 1988 | 128.97 | 73.9099 | 197.7 | 17.28 | | 12.24 | 103000 |
| hainan | 1989 | 125.72 | 61.3999 | 167.884 | 11.31 | | 10.65 | 79890.82 |
| hainan | 1990 | 170.06 | 80.4099 | | 19.39 | | 18.6099 | |
| hainan | 1991 | 175.919 | 82.93 | 176.446 | 54.17 | | 30.51 | 62430 |
| hainan | 1992 | 204.66 | 103.02 | 183.964 | 62.99 | 0 | 37.6 | 65000 |
| hainan | 1993 | 203.71 | 99.5 | 132.343 | 51.8999 | 0 | 31.4499 | 63233.55 |
| hainan | 1994 | 203.11 | 86.5799 | 125.966 | 39.6199 | 0 | 38.1199 | 50380.849 |
| hainan | 1995 | 201.99 | 69.8499 | 94.6079 | 36.39 | 0 | 39.02 | 35599.79 |
| hebei | 1987 | 1303.76 | 991.509 | 188.169 | 283.899 | | 498.899 | 279000 |
| hebei | 1988 | 1284.04 | 966.509 | 175.034 | 334.94 | | 487.31 | 280000 |
| hebei | 1989 | 1370.67 | 975.25 | 170.442 | 305.949 | | 601.169 | 264191.77 |
| hebei | 1990 | 1307.67 | 991.809 | | 310.12 | | 599.71 | |
| hebei | 1991 | 1161.64 | 901.169 | 132.136 | 1037.29 | 46.17 | 554.13 | 334266 |
| hebei | 1992 | 1215.65 | 900.38 | 121.672 | 1066.64 | 78.17 | 551.49 | 259000 |
| hebei | 1993 | 1200.57 | 870.519 | 108.188 | 1278.99 | 67.0999 | 588.149 | 218146.73 |
| hebei | 1994 | 1188.15 | 844.48 | 97.5126 | 1466.32 | 76.17 | 577.509 | 198996.64 |
| hebei | 1995 | 1229.41 | 828.25 | 83.9386 | 1467.81 | 63.8699 | 566.82 | 261577.76 |

CHINA DATA

| Province Name | year | Industrial COD discharge intensity (ton/million yuan output) | waste gas emission (billion m3) | Waste gas emission intensity (m3/yuan output) | industrial waste gas emission (billion m3) | Industrial waste gas emission intensity (m3/yuan output) | SO2 discharge (ton) | SO2 discharge intensity (ton/million yuan output) |
|---|---|---|---|---|---|---|---|---|
| guangxi | 1992 | 12.818181 | 180.9 | 5.48181 | 165 | 5 | 616650 | 18.6863 |
| guangxi | 1993 | 13.60896 | 205.9 | 5.46231 | 179.199 | 4.75399 | 655487 | 17.3893 |
| guangxi | 1994 | 12.222321 | 239.199 | 5.54803 | 203.199 | 4.71304 | 615536 | 14.2768 |
| guangxi | 1995 | 14.926255 | 291.399 | 5.94985 | 234.9 | 4.79623 | 756571 | 15.4478 |
| guizhou | 1987 | 5.1783086 | 174.5 | 11.7352 | | | 673000 | 45.2597 |
| guizhou | 1988 | 8.0892464 | 174.4 | 10.6876 | | | 835000 | 51.1706 |
| guizhou | 1989 | 4.4066034 | 167.699 | 9.37717 | | | 535170 | 29.9247 |
| guizhou | 1990 | | 159.699 | | | | 500000 | |
| guizhou | 1991 | 1.4640414 | 248.099 | 12.8549 | 205.099 | 10.6269 | 640000 | 33.1606 |
| guizhou | 1992 | 2.2222222 | 210.099 | 8.64609 | 184.599 | 7.5967 | 714848 | 29.4176 |
| guizhou | 1993 | 2.3959505 | 243.3 | 9.68716 | 222.099 | 8.84307 | 736511 | 29.3247 |
| guizhou | 1994 | 1.7161069 | 236.9 | 8.79816 | 224.3 | 8.33021 | 733526 | 27.2422 |
| guizhou | 1995 | 1.5717225 | 255 | 9.06475 | 234.199 | 8.32535 | 715245 | 25.4255 |
| hainan | 1987 | | | | | | | |
| hainan | 1988 | 27.551304 | 8.1 | 2.16665 | | | 17000 | 4.5473 |
| hainan | 1989 | 21.844341 | 7.9 | 2.16007 | | | 13286 | 3.63275 |
| hainan | 1990 | | 8 | | | | 10000 | |
| hainan | 1991 | 13.282978 | 11.6999 | 2.48936 | 11.1999 | 2.38297 | 20000 | 4.25531 |
| hainan | 1992 | 11.607142 | 15.3 | 2.73214 | 14.1999 | 2.53571 | 24731 | 4.41625 |
| hainan | 1993 | 8.4106069 | 18.1999 | 2.42075 | 18.1999 | 2.42075 | 24501 | 3.25884 |
| hainan | 1994 | 7.3299894 | 18.5 | 2.69159 | 17.8 | 2.58975 | 26255 | 3.81988 |
| hainan | 1995 | 4.8217943 | 18.3999 | 2.49217 | 18.1999 | 2.46508 | 24444 | 3.3108 |
| hebei | 1987 | 5.2948852 | 447 | 8.4832 | | | 863000 | 16.378 |
| hebei | 1988 | 5.0707771 | 459.6 | 8.32331 | | | 931000 | 16.8603 |
| hebei | 1989 | 4.6172237 | 491.1 | 8.58285 | | | 904057 | 15.8 |
| hebei | 1990 | | 566.899 | | | | 890000 | |
| hebei | 1991 | 4.9012609 | 619.1 | 9.07771 | 550.299 | 8.06891 | 890000 | 13.0498 |
| hebei | 1992 | 3.5 | 711.7 | 9.61756 | 647.2 | 8.74594 | 926514 | 12.5204 |
| hebei | 1993 | 2.7111285 | 701 | 8.71203 | 628.2 | 7.80727 | 1021495 | 12.6951 |
| hebei | 1994 | 2.2978258 | 743.7 | 8.58754 | 672.1 | 7.76077 | 1084741 | 12.5255 |
| hebei | 1995 | 2.6509487 | 808.5 | 8.1937 | 737 | 7.46909 | 1162326 | 11.7795 |

CHINA DATA

| Province Name | year | Industrial SO2 discharge | Industrial SO2 discharge intensity (ton/million yuan output) | Total smoke discharge (ton) | smoke discharge intensity (ton/million yuan output) | Industrial Smoke discharge | Industrial smoke discharge intensity (ton/million yuan output) | industrial smoke treatment( ton) |
|---|---|---|---|---|---|---|---|---|
| guangxi | 1992 | 558768 | 16.9323 | 347395 | 10.5271 | 288689 | 8.74815 | 2545163 |
| guangxi | 1993 | 522243 | 13.8545 | 337307 | 8.9484 | 249445 | 6.61751 | 2771078 |
| guangxi | 1994 | 511150 | 11.8556 | 323221 | 7.49682 | 238726 | 5.53703 | 2298104 |
| guangxi | 1995 | 579485 | 11.832 | 497793 | 10.164 | 299875 | 6.1229 | 2324469 |
| guizhou | 1987 | | | 239000 | 16.0729 | | | |
| guizhou | 1988 | | | 234000 | 14.34 | | | |
| guizhou | 1989 | | | 276058 | 15.4361 | | | |
| guizhou | 1990 | | | 250000 | | | | |
| guizhou | 1991 | 390000 | 20.2072 | 300000 | 15.544 | 160000 | 8.29015 | 1290743 |
| guizhou | 1992 | 556758 | 22.9118 | 341544 | 14.0553 | 241003 | 9.91781 | 778603 |
| guizhou | 1993 | 585409 | 23.3084 | 346554 | 13.7982 | 236262 | 9.40694 | 1667975 |
| guizhou | 1994 | 622900 | 23.1337 | 338709 | 12.5792 | 241718 | 8.9771 | 1698281 |
| guizhou | 1995 | 566856 | 20.1506 | 400067 | 14.2216 | 248577 | 8.83643 | 2232128 |
| hainan | 1987 | | | | | | | |
| hainan | 1988 | | | 9000 | 2.40739 | | | |
| hainan | 1989 | | | 12824 | 3.50643 | | | |
| hainan | 1990 | | | 10000 | | | | |
| hainan | 1991 | 10000 | 2.12765 | 7000 | 1.48936 | 10000 | 2.12765 | 117852 |
| hainan | 1992 | 22894 | 4.08821 | 14890 | 2.65892 | 10929 | 1.9516 | 24001 |
| hainan | 1993 | 23657 | 3.14658 | 16622 | 2.21086 | 12427 | 1.65289 | 215873 |
| hainan | 1994 | 24438 | 3.55552 | 10675 | 1.55312 | 13600 | 1.97868 | 214718 |
| hainan | 1995 | 24844 | 3.36498 | 12255 | 1.65987 | 12036 | 1.6302 | 243654 |
| hebei | 1987 | | | 820000 | 15.562 | | | |
| hebei | 1988 | | | 887000 | 16.0634 | | | |
| hebei | 1989 | | | 787559 | 13.764 | | | |
| hebei | 1990 | | | 760000 | | | | |
| hebei | 1991 | 740000 | 10.8504 | 670000 | 9.82404 | 430000 | 6.30498 | 5265243 |
| hebei | 1992 | 785038 | 10.6086 | 669941 | 9.05325 | 455307 | 6.15279 | 6165844 |
| hebei | 1993 | 860167 | 10.6901 | 692698 | 8.60885 | 460112 | 5.71827 | 6235502 |
| hebei | 1994 | 905969 | 10.4612 | 775246 | 8.95181 | 477876 | 5.51806 | 7116504 |
| hebei | 1995 | 944139 | 9.56833 | 680063 | 6.89206 | 445646 | 4.51638 | 7752096 |

| Province Name | year | Industrial dust discharge (ton) | Industrial dust discharge intensity (ton/million yuan output) | industrial dust recovery (ton) | Output Value of Waste Recycling (million yuan) | Coal Consumption (million T) | No. of Enterprises in Sample of Envir Data | Total Value of Industrial Output from sampling enterprises (million yuan)(1990 constant price, an index of 1.684 is used converting 1980 price to 1990) |
|---|---|---|---|---|---|---|---|---|
| guangxi | 1992 | 202200 | 6.12727 | 913722 | 599.634 | 15.23 | 1214 | 33000 |
| guangxi | 1993 | 187656 | 4.97831 | 1130897 | 765.825 | 14.72 | 1211 | 37694.6 |
| guangxi | 1994 | 200827 | 4.658 | 1164962 | 825.983 | 14.6099 | 1227 | 43114.3 |
| guangxi | 1995 | 276033 | 5.63609 | 1352422 | 1103.22 | 16.68 | 1372 | 48975.9 |
| guizhou | 1987 | 300000 | 20.1752 | 170000 | 44.95 | 13.81 | 3223 | 14869.7 |
| guizhou | 1988 | 260000 | 15.9333 | 230000 | 60.6899 | 11.63 | 2336 | 16317.9 |
| guizhou | 1989 | 240000 | 13.4199 | 220000 | 60.27 | 10.75 | 2097 | 17883.8 |
| guizhou | 1990 | 220000 | | | 77.0499 | | | |
| guizhou | 1991 | 140000 | 7.25388 | 583756 | 95.15 | 9.85999 | 1782 | 19300 |
| guizhou | 1992 | 163226 | 6.71711 | 422504 | 183.722 | 14.41 | 2531 | 24300 |
| guizhou | 1993 | 156471 | 6.23 | 430559 | 203.976 | 15.22 | 2307 | 25115.7 |
| guizhou | 1994 | 156394 | 5.80827 | 358797 | 224.882 | 16.84 | 2155 | 26926 |
| guizhou | 1995 | 205183 | 7.29386 | 328139 | 373.759 | 16.8 | 2098 | 28130.9 |
| hainan | 1987 | | | | | | | |
| hainan | 1988 | 20000 | 5.34976 | 10000 | 10.38 | 0.51 | 403 | 3738.48 |
| hainan | 1989 | 20000 | 5.46854 | 20000 | 10.01 | 0.54 | 347 | 3657.27 |
| hainan | 1990 | 20000 | | | 13.02 | | | |
| hainan | 1991 | 10000 | 2.12765 | 13318 | 23.57 | 0.71 | 418 | 4700 |
| hainan | 1992 | 17325 | 3.09375 | 10305 | 30.423 | 0.92 | 408 | 5600 |
| hainan | 1993 | 12328 | 1.63973 | 16439 | 38.204 | 1.27 | 387 | 7518.31 |
| hainan | 1994 | 12805 | 1.86301 | 19147 | 31.0569 | 1.36 | 377 | 6873.25 |
| hainan | 1995 | 14040 | 1.90164 | 31233 | 44.619 | 1.49 | 369 | 7383.1 |
| hebei | 1987 | 610000 | 11.5766 | 1140000 | 89.5799 | 45.1199 | 2856 | 52692.3 |
| hebei | 1988 | 780000 | 14.1257 | 1080000 | 141.419 | 48.07 | 2816 | 55218.3 |
| hebei | 1989 | 490000 | 8.56362 | 1040000 | 155.62 | 49.32 | 2759 | 57218.7 |
| hebei | 1990 | 410000 | | | 177.72 | | | |
| hebei | 1991 | 420000 | 6.15835 | 2134331 | 320.88 | 45.21 | 2758 | 68200 |
| hebei | 1992 | 433078 | 5.8524 | 3293847 | 356.601 | 47.02 | 2655 | 74000 |
| hebei | 1993 | 407373 | 5.06283 | 2571576 | 575.44 | 52.6899 | 2655 | 80463.4 |
| hebei | 1994 | 381354 | 4.40351 | 2515790 | 749.708 | 54.5499 | 2658 | 86602.1 |
| hebei | 1995 | 371138 | 3.76128 | 2345994 | 1148.06 | 60.02 | 2729 | 98673.2 |

CHINA DATA

| Province Name | year | # of Enterprises paying for pollution discharge | Total pollution discharge fee collected (total levy; million yuan) | levy on waste water (million yuan) | levy on waste gas(million yuan) | levy on sewage water (million yuan) | Total # of environmental accidents | Compensation for environmental accidents (million yuan) |
|---|---|---|---|---|---|---|---|---|
| guangxi | 1992 | 2160 | 62.001 | 32.991 | 10.3459 | 0.696 | 244 | 1.549 |
| guangxi | 1993 | 2887 | 77.37 | 41.3539 | 11.08 | 2.412 | 244 | 2.169 |
| guangxi | 1994 | 3313 | 110.507 | 56.95 | 20.219 | 4.309 | 334 | 3.498 |
| guangxi | 1995 | 5101 | 144.83 | 74.953 | 21.3559 | 4.796 | - | - |
| guizhou | 1987 | 1504 | 11.63 | 4.97 | 5.44 | | 42 | 0.57 |
| guizhou | 1988 | 1544 | 12.76 | 5.27 | 5.14 | | 60 | 1.06 |
| guizhou | 1989 | 1560 | 14.9 | 6.54 | 6.52 | | 66 | 0.85 |
| guizhou | 1990 | 3598 | 14.345 | | | | | |
| guizhou | 1991 | 4582 | 23.1209 | | | 2.638 | 73 | 0.77 |
| guizhou | 1992 | 3426 | 22.788 | 8.037 | 9.202 | 2.814 | 64 | 0.725 |
| guizhou | 1993 | 4014 | 24.1569 | 7.608 | 9.48899 | 3.216 | 86 | 1.421 |
| guizhou | 1994 | 4072 | 33.819 | 8.746 | 16.557 | 3.974 | 98 | 1.913 |
| guizhou | 1995 | 4534 | 39.6599 | 9.912 | 20.212 | 3.498 | 76 | 1.181 |
| hainan | 1987 | | | | | | | |
| hainan | 1988 | 863 | 2.54 | 1.4 | 0.86 | | 10 | 0.06 |
| hainan | 1989 | 1818 | 3.34 | 2.14 | 0.68 | | 7 | 0.16 |
| hainan | 1990 | 1607 | 40.733 | | | | | |
| hainan | 1991 | 1836 | 6.48 | | | 1.32 | 10 | 0.154 |
| hainan | 1992 | 1857 | 10.368 | 5.057 | 1.076 | 2.201 | 13 | 0.054 |
| hainan | 1993 | 2421 | 13.59 | 5.641 | 1.157 | 3.333 | 14 | 0.025 |
| hainan | 1994 | 2421 | 16.9409 | 7.8 | 1.095 | 4.404 | 7 | 0.023 |
| hainan | 1995 | 2517 | 16.827 | 7.65 | 1.382 | 2.268 | - | - |
| hebei | 1987 | 7485 | 52.92 | 26.5 | 18.7199 | | 92 | 4.49 |
| hebei | 1988 | 8182 | 60.3999 | 30.35 | 21.3799 | | 137 | 4.87 |
| hebei | 1989 | 11116 | 64.6099 | 29.76 | 24.7899 | | 170 | 7.5 |
| hebei | 1990 | 11488 | 60.591 | | | | | |
| hebei | 1991 | 14673 | 72.4399 | | | 0.03 | 195 | 4.661 |
| hebei | 1992 | 14126 | 81.376 | 30.103 | 34.82 | 0.072 | 171 | 2.811 |
| hebei | 1993 | 16428 | 90.8239 | 30.2899 | 37.6109 | 1.084 | 101 | 0.603 |
| hebei | 1994 | 20018 | 112.876 | 35.6599 | 38.814 | 12.44 | 93 | 0.664 |
| hebei | 1995 | 25034 | 131.212 | 39.8619 | 39.0979 | 15.971 | 139 | 3.446 |

CHINA DATA

| Province Name | year | Fine for environmental accidents (million yuan) | # of pollution complaint letters governments received | # of pollution complaint letters governments responded | # of citizen-visits to government offices for environmental issues |
|---|---|---|---|---|---|
| guangxi | 1992 | 0.06 | 1638 | 1536 | 3654 |
| guangxi | 1993 | 0.233 | 1512 | 1184 | 3455 |
| guangxi | 1994 | 0.263 | 1626 | 1522 | 4977 |
| guangxi | 1995 | - | 1681 | 1526 | 5452 |
| guizhou | 1987 | 0.08 | 851 | | 1139 |
| guizhou | 1988 | 0.02 | 797 | | 1028 |
| guizhou | 1989 | 0.04 | 744 | | 1231 |
| guizhou | 1990 | | 1137 | | 1869 |
| guizhou | 1991 | 0.049 | 1147 | 888 | 3300 |
| guizhou | 1992 | 0.121 | 876 | 615 | 1598 |
| guizhou | 1993 | 0.204 | 1102 | 871 | 2294 |
| guizhou | 1994 | 0.075 | 1302 | 1169 | 2459 |
| guizhou | 1995 | 0.073 | 911 | 724 | 1577 |
| hainan | 1987 | | | | |
| hainan | 1988 | 0.04 | 293 | | 595 |
| hainan | 1989 | 0.02 | 268 | | 548 |
| hainan | 1990 | | 265 | | 508 |
| hainan | 1991 | 0.031 | 204 | 169 | 500 |
| hainan | 1992 | 0.009 | 322 | 244 | 585 |
| hainan | 1993 | 0.132 | 346 | 255 | 871 |
| hainan | 1994 | 0.002 | 551 | 337 | 644 |
| hainan | 1995 | - | 446 | 384 | 389 |
| hebei | 1987 | 0.5 | 1817 | | 5600 |
| hebei | 1988 | 0.76 | 2095 | | 5478 |
| hebei | 1989 | 2.22 | 1720 | | 6497 |
| hebei | 1990 | | 1664 | | 4901 |
| hebei | 1991 | 0.247 | 1723 | 1475 | 6533 |
| hebei | 1992 | 0.432 | 1764 | 1596 | 5322 |
| hebei | 1993 | 0.146 | 1612 | 1361 | 5561 |
| hebei | 1994 | 0.227 | 1855 | 1672 | 7341 |
| hebei | 1995 | 0.281 | 2194 | 2040 | 8352 |

CHINA DATA

| Province Name | year | Total Wastewater Discharge (million T) | Total Industrial Waste Water Discharge (million T) | Industrial wastewater discharge intensity (ton/10,000 yuan output) | Total Industrial Waste Water Treated (million T) | Of which: treated by city water treatment plant and centralized treatment facilities (million T) | Total Industrial Waste Water Meeting Discharge Standard (million T) | Industrial COD discharge (ton) |
|---|---|---|---|---|---|---|---|---|
| heilongjian | 1987 | 1411.33 | 1028.02 | 176.485 | 366.79 | | 512.179 | 291000 |
| heilongjian | 1988 | 1518.25 | 1190.29 | 186.398 | 433.319 | | 531.419 | 704000 |
| heilongjian | 1989 | 1479.73 | 1128.98 | 164.64 | 441.38 | | 451.86 | 211414.51 |
| heilongjian | 1990 | 1517.42 | 1123.98 | | 473.509 | | 511.399 | |
| heilongjian | 1991 | 1252.55 | 803.429 | 103.136 | 619.419 | | 306.94 | 282942 |
| heilongjian | 1992 | 1339.57 | 774.21 | 98.1254 | 645.559 | 28.2899 | 355.68 | 280000 |
| heilongjian | 1993 | 1295.59 | 740.929 | 95.9733 | 660.24 | 41.7999 | 376.81 | 219752.23 |
| heilongjian | 1994 | 1290.29 | 712.519 | 87.7742 | 728.529 | 39.5399 | 377.75 | 215100.62 |
| heilongjian | 1995 | 1287.17 | 693.889 | 78.4619 | 782.85 | 35.2599 | 374.199 | 216917.62 |
| henan | 1987 | 1519.73 | 1109.89 | 233.716 | 229.31 | | 417 | 335000 |
| henan | 1988 | 1745.27 | 1087.41 | 196.749 | 292.43 | | 427.97 | 334000 |
| henan | 1989 | 1562.05 | 1057.32 | 176.048 | 359.44 | | 484.839 | 306124.75 |
| henan | 1990 | 1577.09 | 1049.33 | | 386.63 | | 456.56 | |
| henan | 1991 | 1466.59 | 954.679 | 147.1 | 878.57 | 7.21 | 401.49 | 389658 |
| henan | 1992 | 1552.23 | 949.789 | 127.659 | 1504.11 | 14.17 | 435.819 | 391000 |
| henan | 1993 | 1489.78 | 925.179 | 110.26 | 951.97 | 19.4699 | 421.16 | 350506.58 |
| henan | 1994 | 1594.63 | 932.389 | 99.6103 | 1100.14 | 10.51 | 431.44 | 374612.9 |
| henan | 1995 | 1693.11 | 983.639 | 83.6415 | 1454.78 | 11.65 | 482.88 | 647304.64 |
| hubei | 1987 | 2499.71 | 1803.45 | 201.606 | 335.91 | | 720.009 | 210000 |
| hubei | 1988 | 2967.42 | 2134.84 | 225.093 | 333.85 | | 772.33 | 280000 |
| hubei | 1989 | 2490.09 | 1561.7 | 206.092 | 366.839 | | 788.289 | 338025.09 |
| hubei | 1990 | 2596.98 | 1623.02 | | 395.279 | | 857.09 | |
| hubei | 1991 | 2655.09 | 1534.19 | 210.74 | 843.259 | 6.8 | 866.87 | 426482 |
| hubei | 1992 | 2612.4 | 1446.25 | 174.457 | 1023.91 | 8.02999 | 885.409 | 373000 |
| hubei | 1993 | 2742.01 | 1412.51 | 148.918 | 1049.31 | 9.94 | 807.059 | 351832.53 |
| hubei | 1994 | 2876.65 | 1426.84 | 134.281 | 1152.74 | 8.77999 | 839.429 | 282686.76 |
| hubei | 1995 | 3005.98 | 1399.38 | 121.8 | 1182.13 | 9.89 | 863.419 | 268239.32 |
| hunan | 1987 | 2212.94 | 1956.8 | 469.685 | 627.36 | | 795.009 | 382000 |
| hunan | 1988 | 2226.79 | 1937.04 | 413.02 | 641.96 | | 871.809 | 460000 |
| hunan | 1989 | 2267.4 | 1969.64 | 391.788 | 719.95 | | 887.88 | 391426.94 |
| hunan | 1990 | 2179.23 | 1886.32 | | 742.679 | | 931.899 | |

CHINA DATA

| Province Name | year | Industrial COD discharge intensity (ton/million yuan output) | waste gas emission (billion m3) | Waste gas emission intensity (m3/yuan output) | industrial waste gas emission (billion m3) | Industrial waste gas emission intensity (m3/yuan output) | SO2 discharge (ton) | SO2 discharge intensity (ton/million yuan output) |
|---|---|---|---|---|---|---|---|---|
| heilongjian | 1987 | 4.9957458 | 436.399 | 7.4919 | | | 271000 | 4.65239 |
| heilongjian | 1988 | 11.024584 | 456.1 | 7.14249 | | | 307000 | 4.80759 |
| heilongjian | 1989 | 3.0830818 | 477.8 | 6.96781 | | | 617501 | 9.00508 |
| heilongjian | 1990 | | 484.6 | | | | 320000 | |
| heilongjian | 1991 | 3.6321181 | 514.399 | 6.60333 | 408 | 5.23748 | 290000 | 3.72272 |
| heilongjian | 1992 | 3.5487959 | 544.7 | 6.90367 | 419.3 | 5.31432 | 318580 | 4.03776 |
| heilongjian | 1993 | 2.8464696 | 550.899 | 7.13585 | 414.5 | 5.36905 | 321728 | 4.16737 |
| heilongjian | 1994 | 2.6497905 | 534.5 | 6.58442 | 414.5 | 5.10616 | 319777 | 3.93928 |
| heilongjian | 1995 | 2.4528061 | 545.1 | 6.16374 | 422.399 | 4.7763 | 341611 | 3.86278 |
| henan | 1987 | 7.0542949 | 369.899 | 7.7892 | | | 499000 | 10.5077 |
| henan | 1988 | 6.0431837 | 406 | 7.3459 | | | 523000 | 9.46282 |
| henan | 1989 | 5.0970612 | 372.6 | 6.20389 | | | 676566 | 11.265 |
| henan | 1990 | | 376.399 | | | | 490000 | |
| henan | 1991 | 6.0039753 | 462.6 | 7.12788 | 418.5 | 6.44838 | 520000 | 8.01232 |
| henan | 1992 | 5.2553763 | 500.5 | 6.72715 | 446.8 | 6.00537 | 577220 | 7.75833 |
| henan | 1993 | 4.1772316 | 538.5 | 6.41768 | 486.6 | 5.79915 | 519154 | 6.18712 |
| henan | 1994 | 4.0021159 | 580.799 | 6.20488 | 514.899 | 5.50085 | 569453 | 6.08365 |
| henan | 1995 | 5.5042059 | 731.6 | 6.22099 | 609.2 | 5.18019 | 658956 | 5.60328 |
| hubei | 1987 | 2.3475731 | 272.5 | 3.04625 | | | 477000 | 5.33234 |
| hubei | 1988 | 2.9522511 | 319.1 | 3.36451 | | | 639000 | 6.73745 |
| hubei | 1989 | 4.4607982 | 327.8 | 4.32586 | | | 623741 | 8.23129 |
| hubei | 1990 | | 341.6 | | | | 560000 | |
| hubei | 1991 | 5.8582692 | 389.199 | 5.34615 | 340.6 | 4.67857 | 480000 | 6.5934 |
| hubei | 1992 | 4.4993968 | 364.5 | 4.39686 | 354.699 | 4.27864 | 488843 | 5.89677 |
| hubei | 1993 | 3.7093052 | 397.1 | 4.18655 | 356.5 | 3.75851 | 487826 | 5.14305 |
| hubei | 1994 | 2.6603699 | 429.5 | 4.04203 | 386.8 | 3.64018 | 517144 | 4.86685 |
| hubei | 1995 | 2.3347175 | 448.5 | 3.90368 | 390.1 | 3.39537 | 539539 | 4.69607 |
| hunan | 1987 | 9.1689917 | 233.4 | 5.6022 | | | 478000 | 11.4732 |
| hunan | 1988 | 9.8082278 | 254.599 | 5.42864 | | | 505000 | 10.7677 |
| hunan | 1989 | 7.7860285 | 265.3 | 5.27718 | | | 577789 | 11.493 |
| hunan | 1990 | | 271.6 | | | | 550000 | |

CHINA DATA

| Province Name | year | Industrial SO2 discharge | Industrial SO2 discharge intensity (ton/million yuan output) | Total smoke discharge (ton) | smoke discharge intensity (ton/million yuan output) | Industrial Smoke discharge | Industrial smoke discharge intensity (ton/million yuan output) | industrial smoke treatment( ton) |
|---|---|---|---|---|---|---|---|---|
| heilongjian | 1987 | | | 1120000 | 19.2276 | | | |
| heilongjian | 1988 | | | 1122000 | 17.5704 | | | |
| heilongjian | 1989 | | | 1411650 | 20.5862 | | | |
| heilongjian | 1990 | | | 1280000 | | | | |
| heilongjian | 1991 | 220000 | 2.82413 | 1140000 | 14.6341 | 670000 | 8.60077 | 4100765 |
| heilongjian | 1992 | 205024 | 2.59852 | 1788377 | 22.6663 | 547128 | 6.93444 | 4016202 |
| heilongjian | 1993 | 219335 | 2.84106 | 1278987 | 16.5668 | 467019 | 6.04933 | 4139260 |
| heilongjian | 1994 | 232266 | 2.86124 | 1057859 | 13.0315 | 456845 | 5.6278 | 4783990 |
| heilongjian | 1995 | 244849 | 2.76864 | 1085799 | 12.2777 | 461015 | 5.21294 | 4608658 |
| henan | 1987 | | | 754000 | 15.8774 | | | |
| henan | 1988 | | | 928000 | 16.7906 | | | |
| henan | 1989 | | | 717258 | 11.9425 | | | |
| henan | 1990 | | | 590000 | | | | |
| henan | 1991 | 410000 | 6.31741 | 590000 | 9.0909 | 420000 | 6.47149 | 3055341 |
| henan | 1992 | 410707 | 5.52025 | 603863 | 8.11643 | 428322 | 5.75701 | 3206993 |
| henan | 1993 | 408633 | 4.86996 | 613033 | 7.30594 | 438853 | 5.23011 | 3607706 |
| henan | 1994 | 459695 | 4.91107 | 657000 | 7.01895 | 476859 | 5.09444 | 4037813 |
| henan | 1995 | 530149 | 4.50799 | 691309 | 5.87838 | 478576 | 4.06946 | 5776108 |
| hubei | 1987 | | | 367000 | 4.10266 | | | |
| hubei | 1988 | | | 433000 | 4.56544 | | | |
| hubei | 1989 | | | 498685 | 6.58097 | | | |
| hubei | 1990 | | | 470000 | | | | |
| hubei | 1991 | 440000 | 6.04395 | 450000 | 6.18131 | 310000 | 4.25824 | 2082056 |
| hubei | 1992 | 395615 | 4.77219 | 357093 | 4.30751 | 229141 | 2.76406 | 2159168 |
| hubei | 1993 | 382518 | 4.03281 | 438575 | 4.62381 | 230370 | 2.42874 | 2000302 |
| hubei | 1994 | 394922 | 3.71661 | 421869 | 3.97021 | 220021 | 2.07062 | 3082022 |
| hubei | 1995 | 402282 | 3.5014 | 432358 | 3.76318 | 191518 | 1.66694 | 3289963 |
| hunan | 1987 | | | 490000 | 11.7612 | | | |
| hunan | 1988 | | | 318000 | 6.78047 | | | |
| hunan | 1989 | | | 387874 | 7.71535 | | | |
| hunan | 1990 | | | 380000 | | | | |

CHINA DATA

| Province Name | year | Industrial dust discharge (ton) | Industrial dust discharge intensity (ton/million yuan output) | industrial dust recovery (ton) | Output Value of Waste Recycling (million yuan) | Coal Consumption (million T) | No. of Enterprises in Sample of Envir Data | Total Value of Industrial Output from sampling enterprises (million yuan)(1990 constant price, an index of 1.684 is used converting 1980 price to 1990) |
|---|---|---|---|---|---|---|---|---|
| heilongjian | 1987 | 560000 | 9.6138 | 290000 | 260.449 | 39.9099 | 3810 | 58249.5 |
| heilongjian | 1988 | 240000 | 3.75838 | 260000 | 319.209 | 47.17 | 4049 | 63857.2 |
| heilongjian | 1989 | 220000 | 3.20828 | 320000 | 454.41 | 47.95 | 4152 | 68572.4 |
| heilongjian | 1990 | 280000 | | | 437.74 | | | |
| heilongjian | 1991 | 130000 | 1.6688 | 383701 | 1032.28 | 39.93 | 2884 | 77900 |
| heilongjian | 1992 | 183131 | 2.32105 | 426365 | 816.94 | 39.8699 | 2546 | 78900 |
| heilongjian | 1993 | 186119 | 2.41081 | 538650 | 647.391 | 40.7 | 2385 | 77201.6 |
| heilongjian | 1994 | 166265 | 2.04819 | 478465 | 559.802 | 42.67 | 2230 | 81176.4 |
| heilongjian | 1995 | 134562 | 1.52156 | 424364 | 790.251 | 43.4799 | 2165 | 88436.5 |
| henan | 1987 | 450000 | 9.47591 | 1020000 | 117.319 | 37.67 | 3518 | 47488.8 |
| henan | 1988 | 500000 | 9.04668 | 1210000 | 181.919 | 39.1499 | 3358 | 55268.8 |
| henan | 1989 | 390000 | 6.4936 | 1090000 | 229.86 | 40.46 | 3298 | 60059 |
| henan | 1990 | 510000 | | | 231.65 | | | |
| henan | 1991 | 260000 | 4.00616 | 1112726 | 306.759 | 35.7299 | 2520 | 64900 |
| henan | 1992 | 284385 | 3.82237 | 2115173 | 380.081 | 38.64 | 2428 | 74400 |
| henan | 1993 | 290252 | 3.45913 | 2771458 | 582.836 | 41.5099 | 2350 | 83908.8 |
| henan | 1994 | 257335 | 2.74919 | 1682489 | 691.908 | 43.9799 | 2255 | 93603.7 |
| henan | 1995 | 402321 | 3.42104 | 2552996 | 1114.91 | 52.6 | 2713 | 117601 |
| hubei | 1987 | 530000 | 5.92482 | 1060000 | 179.91 | 23.46 | 7578 | 89454 |
| hubei | 1988 | 390000 | 4.11206 | 1050000 | 247.61 | 26.09 | 7890 | 94842.8 |
| hubei | 1989 | 330000 | 4.35489 | 1070000 | 257.279 | 28.1 | 3318 | 75776.8 |
| hubei | 1990 | 310000 | | | 284.16 | | | |
| hubei | 1991 | 310000 | 4.25824 | 1077094 | 468.42 | 23.92 | 3062 | 72800 |
| hubei | 1992 | 268487 | 3.23868 | 1162923 | 517.053 | 24.1999 | 2955 | 82900 |
| hubei | 1993 | 259730 | 2.73828 | 1135176 | 723.668 | 25.2199 | 2776 | 94851.3 |
| hubei | 1994 | 225028 | 2.11774 | 1162038 | 835.648 | 28.0799 | 2611 | 106258 |
| hubei | 1995 | 237561 | 2.06769 | 1244453 | 970.583 | 28.19 | 2647 | 114891 |
| hunan | 1987 | 420000 | 10.081 | 790000 | 344.86 | 20.4499 | 3291 | 41662.1 |
| hunan | 1988 | 590000 | 12.5801 | 1120000 | 463.639 | 20.76 | 3638 | 46899.4 |
| hunan | 1989 | 400000 | 7.95655 | 840000 | 332.47 | 21.92 | 3789 | 50272.9 |
| hunan | 1990 | 390000 | | | 366.199 | | | |

CHINA DATA

| Province Name | year | # of Enterprises paying for pollution discharge | Total pollution discharge fee collected (total levy; million yuan) | levy on waste water (million yuan) | levy on waste gas(million yuan) | levy on sewage water (million yuan) | Total # of environmental accidents | Compensation for environmental accidents (million yuan) |
|---|---|---|---|---|---|---|---|---|
| heilongjian | 1987 | 11400 | 53.92 | 19.9499 | 28.84 | | 77 | 0.77 |
| heilongjian | 1988 | 13091 | 67.5199 | 29.16 | 33.27 | | 49 | 0.88 |
| heilongjian | 1989 | 12201 | 68.03 | 25.41 | 31.85 | | 31 | 0.47 |
| heilongjian | 1990 | 12174 | 71.2989 | | | | | |
| heilongjian | 1991 | 11029 | 75.67 | | | | 16 | 0.119 |
| heilongjian | 1992 | 11097 | 83.0699 | 35.0399 | 25.7199 | 0 | 11 | 0.5 |
| heilongjian | 1993 | 12641 | 95.2039 | 40.0069 | 27.2019 | 2.142 | 11 | 0.043 |
| heilongjian | 1994 | 13033 | 96.8639 | 36.5009 | 27.5219 | 5.959 | 5 | 0.039 |
| heilongjian | 1995 | 12329 | 107.672 | 40.884 | 28.8519 | 8.39 | 2 | 0.03 |
| henan | 1987 | 4510 | 55.75 | 33.31 | 16.28 | | 82 | 2.03 |
| henan | 1988 | 5589 | 66.4399 | 40.7199 | 19.3999 | | 163 | 9.21 |
| henan | 1989 | 6698 | 68.5799 | 40.81 | 20.19 | | 165 | 3.55 |
| henan | 1990 | 10281 | 76.676 | | | | | |
| henan | 1991 | 9131 | 89.797 | | | 15.7479 | 105 | 1.147 |
| henan | 1992 | 7919 | 100.7 | 46.951 | 22.428 | 16.475 | 90 | 0.89 |
| henan | 1993 | 9266 | 115.532 | 46.728 | 24.9149 | 18.0159 | 104 | 0.866 |
| henan | 1994 | 11766 | 136.953 | 48.681 | 26.695 | 21.748 | 94 | 0.82 |
| henan | 1995 | 16219 | 183.574 | 61.57 | 30.103 | 24.503 | 61 | 2.735 |
| hubei | 1987 | 3508 | 67.2399 | 44.71 | 16.94 | | 155 | 4.49 |
| hubei | 1988 | 4258 | 75.0699 | 46.95 | 21.43 | | 206 | 3.03 |
| hubei | 1989 | 4436 | 76.43 | 46.64 | 18.5 | | 167 | 3.35 |
| hubei | 1990 | 4006 | 78.2939 | | | | | |
| hubei | 1991 | 4603 | 84.3799 | | | 0.492 | 111 | 0.707 |
| hubei | 1992 | 4979 | 96.42 | 61.8369 | 18.565 | 2.863 | 50 | 0.345 |
| hubei | 1993 | 6540 | 101.915 | 56.701 | 19.6809 | 11.781 | 57 | 0.297 |
| hubei | 1994 | 7726 | 117.787 | 61.176 | 21.0469 | 18.221 | 70 | 0.359 |
| hubei | 1995 | 9409 | 138.704 | 66.121 | 20.898 | 23.916 | 62 | 0.777 |
| hunan | 1987 | 6120 | 78.93 | 45.6199 | 18.2399 | | 354 | 8.10999 |
| hunan | 1988 | 6967 | 88.5499 | 48.85 | 20.84 | | 343 | 9.09 |
| hunan | 1989 | 8159 | 97.65 | 54.7899 | 21.7399 | | 240 | 10.57 |
| hunan | 1990 | 8475 | 101.768 | | | | | |

CHINA DATA

| Province Name | year | Fine for environmental accidents (million yuan) | # of pollution complaint letters governments received | # of pollution complaint letters governments responded | # of citizen-visits to government offices for environmental issues |
|---|---|---|---|---|---|
| heilongjian | 1987 | 0.46 | 1893 | | 2810 |
| heilongjian | 1988 | 0.17 | 1559 | | 2128 |
| heilongjian | 1989 | 0.29 | 1227 | | 1637 |
| heilongjian | 1990 | | 1713 | | 2271 |
| heilongjian | 1991 | 0.034 | 1803 | 1658 | 3626 |
| heilongjian | 1992 | 0.057 | 1817 | 1555 | 4115 |
| heilongjian | 1993 | 0.115 | 1231 | 1178 | 4671 |
| heilongjian | 1994 | 0.02 | 1442 | 1425 | 2558 |
| heilongjian | 1995 | 0 | 1785 | 1701 | 4876 |
| henan | 1987 | 0.47 | 2451 | | 9387 |
| henan | 1988 | 0.57 | 2291 | | 7494 |
| henan | 1989 | 1.68 | 2081 | | 8675 |
| henan | 1990 | | 1769 | | 7731 |
| henan | 1991 | 0.298 | 1705 | 1437 | 5374 |
| henan | 1992 | 0.114 | 1719 | 1232 | 4760 |
| henan | 1993 | 0.238 | 1670 | 1359 | 4729 |
| henan | 1994 | 0.239 | 1746 | 1395 | 5117 |
| henan | 1995 | 0.136 | 1699 | 1576 | 8830 |
| hubei | 1987 | 0.33 | 2359 | | 2864 |
| hubei | 1988 | 7.02 | 2111 | | 2829 |
| hubei | 1989 | 1.74 | 1884 | | 3269 |
| hubei | 1990 | | 1619 | | 2392 |
| hubei | 1991 | 0.072 | 1519 | 1474 | 2673 |
| hubei | 1992 | 0.011 | 1692 | 1545 | 2869 |
| hubei | 1993 | 0.029 | 1510 | 1465 | 2430 |
| hubei | 1994 | 0.062 | 1579 | 1540 | 2440 |
| hubei | 1995 | 0.076 | 1947 | 1877 | 1577 |
| hunan | 1987 | 0.74 | 4943 | | 7968 |
| hunan | 1988 | 0.69 | 3255 | | 6589 |
| hunan | 1989 | 0.64 | 2318 | | 6353 |
| hunan | 1990 | | 3234 | | 6414 |

CHINA DATA

| Province Name | year | Total Wastewater Discharge (million T) | Total Industrial Waste Water Discharge (million T) | Industrial wastewater discharge intensity (ton/10,000 yuan output) | Total Industrial Waste Water Treated (million T) | Of which: treated by city water treatment plant and centralized treatment facilities (million T) | Total Industrial Waste Water Meeting Discharge Standard (million T) | Industrial COD discharge (ton) |
|---|---|---|---|---|---|---|---|---|
| hunan | 1991 | 2047.73 | 1773.43 | 339.087 | 951.429 | 5.18 | 822.519 | 371139 |
| hunan | 1992 | 2083.59 | 1783.91 | 275.294 | 1077.17 | 4.29 | 942.44 | 400000 |
| hunan | 1993 | 1815.9 | 1554.27 | 247.161 | 1054.57 | 4.16 | 889.24 | 302581.21 |
| hunan | 1994 | 1718.98 | 1511.14 | 223.447 | 1250.6 | 11.14 | 873.399 | 264088.2 |
| hunan | 1995 | 1675.53 | 1452.51 | 210.365 | 1448.93 | 16.77 | 813.62 | 314830.53 |
| Inner Mong | 1987 | 400.889 | 268.589 | 169.315 | 50.1199 | | 114.06 | 115000 |
| Inner Mong | 1988 | 423.24 | 315.579 | 175.631 | 56.5099 | | 97.1899 | 175000 |
| Inner Mong | 1989 | 408.149 | 262.74 | 130.822 | 60.82 | | 80.84 | 97605.309 |
| Inner Mong | 1990 | 369.259 | 262.25 | | 68.28 | | 97.0199 | |
| Inner Mong | 1991 | 420.38 | 268.769 | 115.849 | 282.209 | 19.43 | 85.78 | 115243 |
| Inner Mong | 1992 | 591.59 | 270.25 | 104.748 | 297.29 | 24.7399 | 103.37 | 86000 |
| Inner Mong | 1993 | 388.959 | 254.88 | 96.7155 | 291.74 | 24.6499 | 92.64 | 98787.52 |
| Inner Mong | 1994 | 393.3 | 270.509 | 101.686 | 292.829 | 32.2899 | 101.22 | 712381.87 |
| Inner Mong | 1995 | 419.899 | 282.389 | 100.973 | 321.86 | 24.8099 | 112.17 | 96252.94 |
| jiangsu | 1987 | 2834.44 | 2346.38 | 169.424 | 618.57 | | 1179.47 | 571000 |
| jiangsu | 1988 | 2917.63 | 2433.88 | 202.592 | 634.46 | | 1222.82 | 597000 |
| jiangsu | 1989 | 2829.36 | 2339.59 | 166.757 | 554.82 | | 1275.94 | 547898.93 |
| jiangsu | 1990 | 2893.57 | 2335.03 | | 592.1 | | 1361.4 | |
| jiangsu | 1991 | 2939.54 | 2396.23 | 169.225 | 748.309 | 1.04 | 1455.46 | 471125 |
| jiangsu | 1992 | 3395.27 | 2248.73 | 130.892 | 865.09 | 7.73 | 1476.3 | 432000 |
| jiangsu | 1993 | 2947.4 | 2116.42 | 99.7081 | 854.94 | 4.71 | 1415.82 | 402130.46 |
| jiangsu | 1994 | 3065.44 | 2115.77 | 79.4054 | 1013.92 | 35.6599 | 1455.04 | 409699.96 |
| jiangsu | 1995 | 2215.75 | 2201.84 | 70.4372 | 1211.06 | 45.7899 | 1440.9 | 503980.46 |
| jiangxi | 1987 | 1059.42 | 821.34 | 354.198 | 330.87 | | 431.22 | 150000 |
| jiangxi | 1988 | 1075.02 | 817.99 | 333.843 | 222.87 | | 419.24 | 151000 |
| jiangxi | 1989 | 1111.94 | 814.58 | 307.379 | 238.11 | | 417.13 | 135242.64 |
| jiangxi | 1990 | 1034.08 | 771.23 | | 266.56 | | 399.37 | |
| jiangxi | 1991 | 991.85 | 760.269 | 275.46 | 405.91 | | 313.319 | 173363 |
| jiangxi | 1992 | 1039.02 | 746.61 | 224.882 | 470.889 | 0 | 340.48 | 231000 |
| jiangxi | 1993 | 1047.63 | 706.85 | 189.742 | 435.61 | 0 | 302.139 | 180726.79 |
| jiangxi | 1994 | 1038.98 | 671.19 | 165.276 | 444.67 | 0 | 320.579 | 144136.7 |

CHINA DATA

| Province Name | year | Industrial COD discharge intensity (ton/million yuan output) | waste gas emission (billion m3) | Waste gas emission intensity (m3/yuan output) | industrial waste gas emission (billion m3) | Industrial waste gas emission intensity (m3/yuan output) | SO2 discharge (ton) | SO2 discharge intensity (ton/million yuan output) |
|---|---|---|---|---|---|---|---|---|
| hunan | 1991 | 7.0963479 | 291.899 | 5.58126 | 287.699 | 5.50095 | 520000 | 9.94263 |
| hunan | 1992 | 6.1728395 | 312.3 | 4.81944 | 309.1 | 4.77006 | 493111 | 7.60973 |
| hunan | 1993 | 4.8116702 | 330.8 | 5.2604 | 320.5 | 5.09661 | 527888 | 8.39451 |
| hunan | 1994 | 3.9049861 | 329.699 | 4.87516 | 325.8 | 4.81749 | 527419 | 7.79877 |
| hunan | 1995 | 4.5596534 | 360.699 | 5.22397 | 346.6 | 5.01976 | 560701 | 8.12056 |
| Inner Mong | 1987 | 7.2494465 | 240.5 | 15.1607 | | | 687000 | 43.3075 |
| Inner Mong | 1988 | 9.7393851 | 259.699 | 14.4532 | | | 511000 | 28.439 |
| Inner Mong | 1989 | 4.8599175 | 270 | 13.4437 | | | 490177 | 24.4066 |
| Inner Mong | 1990 | | 295.199 | | | | 530000 | |
| Inner Mong | 1991 | 4.9673706 | 398.699 | 17.1853 | 288.8 | 12.4482 | 580000 | 25 |
| Inner Mong | 1992 | 3.3333333 | 407.6 | 15.7984 | 300.1 | 11.6317 | 737602 | 28.5892 |
| Inner Mong | 1993 | 3.7485441 | 437.6 | 16.6049 | 340.199 | 12.909 | 657680 | 24.956 |
| Inner Mong | 1994 | 26.778917 | 461.5 | 17.348 | 331.6 | 12.465 | 658214 | 24.7427 |
| Inner Mong | 1995 | 3.4416797 | 408 | 14.5887 | 317.1 | 11.3384 | 742121 | 26.5357 |
| jiangsu | 1987 | 4.122977 | 445.6 | 3.21751 | | | 816000 | 5.89203 |
| jiangsu | 1988 | 4.9693448 | 508.1 | 4.22935 | | | 1039000 | 8.64849 |
| jiangsu | 1989 | 3.9052367 | 517.1 | 3.68571 | | | 1023827 | 7.29748 |
| jiangsu | 1990 | | 504.6 | | | | 1000000 | |
| jiangsu | 1991 | 3.3271539 | 655.5 | 4.62923 | 576.6 | 4.07203 | 1490000 | 10.5225 |
| jiangsu | 1992 | 2.5145518 | 618.399 | 3.59953 | 535.2 | 3.11525 | 1197846 | 6.97232 |
| jiangsu | 1993 | 1.8944965 | 670.299 | 3.15788 | 520.2 | 2.45073 | 1200021 | 5.65347 |
| jiangsu | 1994 | 1.5376147 | 669.899 | 2.51415 | 577.2 | 2.16624 | 1522760 | 5.71495 |
| jiangsu | 1995 | 1.6122417 | 606.5 | 1.9402 | 787.2 | 2.51826 | 924494 | 2.95747 |
| jiangxi | 1987 | 6.4686735 | 142.9 | 6.16248 | | | 278000 | 11.9886 |
| jiangxi | 1988 | 6.1627119 | 160.8 | 6.56267 | | | 313000 | 12.7743 |
| jiangxi | 1989 | 5.1033412 | 164.099 | 6.19226 | | | 322359 | 12.1641 |
| jiangxi | 1990 | | 165.9 | | | | 300000 | |
| jiangxi | 1991 | 6.2812681 | 181.599 | 6.57971 | 170.3 | 6.17028 | 330000 | 11.9565 |
| jiangxi | 1992 | 6.9578313 | 200.699 | 6.04518 | 178.599 | 5.37951 | 316661 | 9.53798 |
| jiangxi | 1993 | 4.8513286 | 198.3 | 5.32305 | 175.099 | 4.70028 | 342764 | 9.20096 |
| jiangxi | 1994 | 3.5492733 | 230.099 | 5.66606 | 206.099 | 5.07507 | 509368 | 12.5428 |

CHINA DATA

| Province Name | year | Industrial SO2 discharge | Industrial SO2 discharge intensity (ton/million yuan output) | Total smoke discharge (ton) | smoke discharge intensity (ton/million yuan output) | Industrial Smoke discharge | Industrial smoke discharge intensity (ton/million yuan output) | industrial smoke treatment( ton) |
|---|---|---|---|---|---|---|---|---|
| hunan | 1991 | 500000 | 9.56022 | 300000 | 5.73613 | 300000 | 5.73613 | 1874201 |
| hunan | 1992 | 478236 | 7.38018 | 285744 | 4.40962 | 277307 | 4.27942 | 1299762 |
| hunan | 1993 | 514905 | 8.18805 | 275217 | 4.37652 | 269769 | 4.28988 | 1445578 |
| hunan | 1994 | 515621 | 7.62431 | 277646 | 4.10546 | 270720 | 4.00304 | 1803559 |
| hunan | 1995 | 578562 | 8.37924 | 318032 | 4.60601 | 306610 | 4.44059 | 3038334 |
| Inner Mong | 1987 | | | 683000 | 43.0554 | | | |
| Inner Mong | 1988 | | | 603000 | 33.5591 | | | |
| Inner Mong | 1989 | | | 649108 | 32.32 | | | |
| Inner Mong | 1990 | | | 660000 | | | | |
| Inner Mong | 1991 | 440000 | 18.9655 | 920000 | 39.6551 | 530000 | 22.8448 | 1899529 |
| Inner Mong | 1992 | 1300365 | 50.4017 | 1022478 | 39.6309 | 983249 | 38.1104 | 3464107 |
| Inner Mong | 1993 | 433533 | 16.4506 | 736276 | 27.9383 | 387015 | 14.6854 | 3830983 |
| Inner Mong | 1994 | 499217 | 18.7659 | 790173 | 29.7031 | 385632 | 14.4961 | 4149459 |
| Inner Mong | 1995 | 531985 | 19.0219 | 941090 | 33.6501 | 396668 | 14.1835 | 4325467 |
| jiangsu | 1987 | | | 714000 | 5.15552 | | | |
| jiangsu | 1988 | | | 894000 | 7.44153 | | | |
| jiangsu | 1989 | | | 754589 | 5.37845 | | | |
| jiangsu | 1990 | | | 620000 | | | | |
| jiangsu | 1991 | 880000 | 6.21468 | 770000 | 5.43785 | 660000 | 4.66101 | 3976193 |
| jiangsu | 1992 | 891666 | 5.19013 | 649098 | 3.77821 | 537012 | 3.12579 | 4386893 |
| jiangsu | 1993 | 913770 | 4.3049 | 757045 | 3.56655 | 581356 | 2.73885 | 5044019 |
| jiangsu | 1994 | 983065 | 3.68946 | 686079 | 2.57487 | 518855 | 1.94727 | 6188165 |
| jiangsu | 1995 | 1044719 | 3.34207 | 410894 | 1.31445 | 540930 | 1.73044 | 7721440 |
| jiangxi | 1987 | | | 213000 | 9.18551 | | | |
| jiangxi | 1988 | | | 281000 | 11.4683 | | | |
| jiangxi | 1989 | | | 303518 | 11.4531 | | | |
| jiangxi | 1990 | | | 300000 | | | | |
| jiangxi | 1991 | 280000 | 10.1449 | 270000 | 9.7826 | 250000 | 9.05797 | 1094067 |
| jiangxi | 1992 | 235669 | 7.09846 | 351696 | 10.5932 | 293195 | 8.83117 | 1418690 |
| jiangxi | 1993 | 246579 | 6.61902 | 337997 | 9.073 | 281782 | 7.56399 | 1805250 |
| jiangxi | 1994 | 416307 | 10.2512 | 395616 | 9.74178 | 281096 | 6.9218 | 2043883 |

CHINA DATA

| Province Name | year | Industrial dust discharge (ton) | Industrial dust discharge intensity (ton/million yuan output) | industrial dust recovery (ton) | Output Value of Waste Recycling (million yuan) | Coal Consumption (million T) | No. of Enterprises in Sample of Envir Data | Total Value of Industrial Output from sampling enterprises (million yuan)(1990 constant price, an index of 1.684 is used converting 1980 price to 1990) |
|---|---|---|---|---|---|---|---|---|
| hunan | 1991 | 280000 | 5.35372 | 869732 | 640.94 | 22.71 | 3584 | 52300 |
| hunan | 1992 | 258429 | 3.9881 | 1007349 | 736.516 | 25.19 | 3483 | 64800 |
| hunan | 1993 | 304616 | 4.84402 | 1090069 | 716.072 | 25.62 | 3418 | 62884.8 |
| hunan | 1994 | 244725 | 3.61866 | 1196658 | 879.123 | 26.1 | 3250 | 67628.4 |
| hunan | 1995 | 271287 | 3.92901 | 1253563 | 983.013 | 27.2199 | 3080 | 69047 |
| Inner Mong | 1987 | 510000 | 32.1497 | 270000 | 98.65 | 26.3 | 2208 | 15863.2 |
| Inner Mong | 1988 | 540000 | 30.0529 | 240000 | 56.96 | 27.27 | 2189 | 17968.2 |
| Inner Mong | 1989 | 160000 | 7.96664 | 310000 | 76.12 | 29.7199 | 1795 | 20083.7 |
| Inner Mong | 1990 | 150000 | | | 55.9799 | | | |
| Inner Mong | 1991 | 150000 | 6.46551 | 411533 | 97.25 | 26.51 | 1568 | 23200 |
| Inner Mong | 1992 | 157726 | 6.11341 | 361131 | 128.87 | 28.98 | 1394 | 25800 |
| Inner Mong | 1993 | 173605 | 6.58753 | 400601 | 159.465 | 28.4699 | 1376 | 26353.5 |
| Inner Mong | 1994 | 147682 | 5.55146 | 540756 | 188.599 | 30.34 | 1295 | 26602.3 |
| Inner Mong | 1995 | 194861 | 6.96757 | 610128 | 309.207 | 31.92 | 1275 | 27966.8 |
| jiangsu | 1987 | 570000 | 4.11575 | 750000 | 300.19 | 37.0499 | 9686 | 138492 |
| jiangsu | 1988 | 510000 | 4.24516 | 650000 | 362.93 | 46.7299 | 9023 | 120136 |
| jiangsu | 1989 | 400000 | 2.85106 | 680000 | 391.88 | 43.3299 | 6716 | 140298 |
| jiangsu | 1990 | 480000 | | | 439.29 | | | |
| jiangsu | 1991 | 290000 | 2.04802 | 826142 | 591.919 | 42.6499 | 5468 | 141600 |
| jiangsu | 1992 | 280470 | 1.63253 | 1004971 | 772.968 | 45.6 | 5474 | 171800 |
| jiangsu | 1993 | 283976 | 1.33785 | 979104 | 933.228 | 47.9699 | 5097 | 212262 |
| jiangsu | 1994 | 294016 | 1.10344 | 1130476 | 1249.27 | 52.2899 | 4992 | 266451 |
| jiangsu | 1995 | 269509 | 0.86216 | 1122147 | 932.075 | 58.6599 | 5377 | 312596 |
| jiangxi | 1987 | 280000 | 12.0748 | 440000 | 107.58 | 14.49 | 2856 | 23188.6 |
| jiangxi | 1988 | 230000 | 9.38691 | 220000 | 129.84 | 15.75 | 2578 | 24502.2 |
| jiangxi | 1989 | 320000 | 12.0751 | 410000 | 161.56 | 16.5 | 2084 | 26500.8 |
| jiangxi | 1990 | 340000 | | | 127.83 | | | |
| jiangxi | 1991 | 260000 | 9.42028 | 428353 | 365.44 | 14.71 | 1885 | 27600 |
| jiangxi | 1992 | 220832 | 6.65156 | 361256 | 430.431 | 14.69 | 1662 | 33200 |
| jiangxi | 1993 | 270522 | 7.26174 | 373653 | 268.865 | 15.6099 | 1629 | 37253 |
| jiangxi | 1994 | 282041 | 6.94507 | 551225 | 354.143 | 16.48 | 1568 | 40610.1 |

CHINA DATA

| Province Name | year | # of Enterprises paying for pollution discharge | Total pollution discharge fee collected (total levy; million yuan) | levy on waste water (million yuan) | levy on waste gas(million yuan) | levy on sewage water (million yuan) | Total # of environmental accidents | Compensation for environmental accidents (million yuan) |
|---|---|---|---|---|---|---|---|---|
| hunan | 1991 | 9242 | 112.14 | | | 0.75 | 179 | 1.587 |
| hunan | 1992 | 10123 | 130.871 | 75.4719 | 27.339 | 1.178 | 230 | 1.698 |
| hunan | 1993 | 11548 | 136.75 | 72.5979 | 28.573 | 1.351 | 290 | 2.388 |
| hunan | 1994 | 16351 | 165.382 | 83.051 | 37.637 | 3.909 | 211 | 6.545 |
| hunan | 1995 | 1444 | 54.942 | 27.927 | 10.3959 | 3.211 | 301 | 4.204 |
| Inner Mong | 1987 | 3273 | 16.66 | 8.28999 | 6.77 | | 14 | 0.4 |
| Inner Mong | 1988 | 3616 | 21.28 | 11.35 | 7.82 | | 21 | 0.7 |
| Inner Mong | 1989 | 4963 | 21.8999 | 11.1099 | 8.28999 | | 6 | 0.74 |
| Inner Mong | 1990 | 4687 | 22.7219 | | | | | |
| Inner Mong | 1991 | 4965 | 26.244 | | | 0.783 | 18 | 0.243 |
| Inner Mong | 1992 | | 27.179 | 11.639 | 9.618 | 0.635 | 18 | 0.428 |
| Inner Mong | 1993 | 5767 | 29.384 | 12.295 | 10.193 | 0.987 | 29 | 1.136 |
| Inner Mong | 1994 | 5055 | 32.942 | 15.354 | 9.357 | 1.152 | 24 | 0.43 |
| Inner Mong | 1995 | 6485 | 37.608 | 12.895 | 12.568 | 1.77 | 26 | 0.751 |
| jiangsu | 1987 | 7337 | 135.669 | 97.79 | 23.3299 | | 499 | 6.64 |
| jiangsu | 1988 | 9042 | 163.96 | 111.5 | 33.7 | | 461 | 7.13 |
| jiangsu | 1989 | 7979 | 144.19 | 94.31 | 31.18 | | 280 | 5.12 |
| jiangsu | 1990 | 8004 | 162.247 | | | | | |
| jiangsu | 1991 | 9433 | 169.169 | | | 1.33 | 490 | 3.775 |
| jiangsu | 1992 | 10340 | 202.759 | 124.95 | 36.7199 | 2.21 | 352 | 3.539 |
| jiangsu | 1993 | 11376 | 214.602 | 118.386 | 38.0279 | 12.093 | 290 | 4.124 |
| jiangsu | 1994 | 12746 | 235.992 | 127.233 | 36.152 | 15.0329 | 311 | 4.748 |
| jiangsu | 1995 | 14681 | 264.455 | 126.61 | 39.555 | 18.52 | 426 | 9.295 |
| jiangxi | 1987 | 2704 | 32.7999 | 21.4499 | 7.35 | | 95 | 1.93 |
| jiangxi | 1988 | 3092 | 34.68 | 21.96 | 8.59 | | 98 | 3.29 |
| jiangxi | 1989 | 4056 | 34.1099 | 19.2399 | 9.07 | | 99 | 3.17 |
| jiangxi | 1990 | 3778 | 32.664 | | | | | |
| jiangxi | 1991 | 3196 | 38.45 | | | | 97 | 1.101 |
| jiangxi | 1992 | 4155 | 42.4239 | 24.486 | 10.693 | 0 | 152 | 0.6 |
| jiangxi | 1993 | 3705 | 46.427 | 27.4519 | 10.867 | 0 | 119 | 1.894 |
| jiangxi | 1994 | 5313 | 51.916 | 27.1959 | 12.648 | 3.363 | 137 | 1.341 |

CHINA DATA

| Province Name | year | Fine for environmental accidents (million yuan) | # of pollution complaint letters governments received | # of pollution complaint letters governments responded | # of citizen-visits to government offices for environmental issues |
|---|---|---|---|---|---|
| hunan | 1991 | 0.165 | 2504 | 2371 | 6787 |
| hunan | 1992 | 0.268 | 2357 | 2191 | 6547 |
| hunan | 1993 | 0.411 | 2019 | 1821 | 4767 |
| hunan | 1994 | 0.207 | 1944 | 1756 | 4893 |
| hunan | 1995 | 0.354 | 2258 | 2058 | 6257 |
| Inner Mong | 1987 | 0.37 | 453 | | 832 |
| Inner Mong | 1988 | 0.12 | 569 | | 632 |
| Inner Mong | 1989 | 0.27 | 665 | | 676 |
| Inner Mong | 1990 | | 630 | | 523 |
| Inner Mong | 1991 | 0.071 | 579 | 474 | 951 |
| Inner Mong | 1992 | 0.029 | 640 | 534 | 642 |
| Inner Mong | 1993 | 0.067 | 500 | 473 | 564 |
| Inner Mong | 1994 | 0.075 | 764 | 494 | 537 |
| Inner Mong | 1995 | 0.175 | 673 | 585 | 838 |
| jiangsu | 1987 | 0.27 | 5180 | | 5163 |
| jiangsu | 1988 | 0.96 | 4882 | | 5319 |
| jiangsu | 1989 | 0.84 | 4128 | | 4837 |
| jiangsu | 1990 | | 5811 | | 4695 |
| jiangsu | 1991 | 0.409 | 5475 | 4949 | 5309 |
| jiangsu | 1992 | 0.179 | 4833 | 4498 | 5239 |
| jiangsu | 1993 | 0.332 | 4285 | 3853 | 5873 |
| jiangsu | 1994 | 0.532 | 3679 | 3448 | 5200 |
| jiangsu | 1995 | 1.011 | 6197 | 6103 | 6658 |
| jiangxi | 1987 | 0.17 | 910 | | 1219 |
| jiangxi | 1988 | 0.37 | 1144 | | 2113 |
| jiangxi | 1989 | 0.84 | 1093 | | 2506 |
| jiangxi | 1990 | | 852 | | 1934 |
| jiangxi | 1991 | 0.116 | 1024 | 942 | 2547 |
| jiangxi | 1992 | 0.079 | 1044 | 846 | 3112 |
| jiangxi | 1993 | 0.159 | 1125 | 922 | 3667 |
| jiangxi | 1994 | 0.089 | 1085 | 978 | 3140 |

| Province Name | year | Total Wastewater Discharge (million T) | Total Industrial Waste Water Discharge (million T) | Industrial wastewater discharge intensity (ton/10,000 yuan output) | Total Industrial Waste Water Treated (million T) | Of which: treated by city water treatment plant and centralized treatment facilities (million T) | Total Industrial Waste Water Meeting Discharge Standard (million T) | Industrial COD discharge (ton) |
|---|---|---|---|---|---|---|---|---|
| jiangxi | 1995 | 1061.24 | 668.799 | 157.943 | 480.779 | 0 | 330.99 | 146567.29 |
| jilin | 1987 | 754.11 | 545.799 | 167.932 | 181.62 | | 218.53 | 295000 |
| jilin | 1988 | 920.19 | 653.169 | 179.985 | 188.46 | | 329.44 | 290000 |
| jilin | 1989 | 894.35 | 618.679 | 162.62 | 192.02 | | 224.21 | 326680.46 |
| jilin | 1990 | 761.21 | 576.45 | | 170.729 | | 314.67 | |
| jilin | 1991 | 880.97 | 553.35 | 149.959 | 305.49 | 157.87 | 302.11 | 266412 |
| jilin | 1992 | 784.08 | 454.22 | 110.247 | 376.25 | 74.7699 | 254.93 | 278000 |
| jilin | 1993 | 725.559 | 442.209 | 78.0749 | 385.089 | 54.27 | 224.18 | 243318.35 |
| jilin | 1994 | 728.259 | 415.42 | 68.2683 | 372.839 | 41.3699 | 210.319 | 245840.38 |
| jilin | 1995 | 788.84 | 468.91 | 73.8744 | 402.87 | 41.42 | 242.229 | 288738.65 |
| liaoning | 1987 | 2234.15 | 1819.68 | 170.652 | 505.22 | | 939.899 | 462000 |
| liaoning | 1988 | 2266.19 | 1682.77 | 142.488 | 530.289 | | 942.34 | 481000 |
| liaoning | 1989 | 2260.26 | 1638.55 | 132.589 | 523.679 | | 921.6 | 562902 |
| liaoning | 1990 | 2237.13 | 1637.14 | | 494.199 | | 954.389 | |
| liaoning | 1991 | 2111.05 | 1516.22 | 117.445 | 1420.92 | 28.37 | 900.919 | 476606 |
| liaoning | 1992 | 2235.78 | 1530.2 | 109.066 | 1429.97 | 41.17 | 998.24 | 374000 |
| liaoning | 1993 | 2180.15 | 1490.8 | 100.713 | 1485.08 | 50.4399 | 994.95 | 353873.5 |
| liaoning | 1994 | 2256.59 | 1476.56 | 96.008 | 1442.3 | 35.99 | 995.19 | 316111.46 |
| liaoning | 1995 | 2210.21 | 1401.93 | 83.6186 | 1486.56 | 59.6099 | 928.97 | 329341.81 |
| ningxia | 1987 | 114.17 | 87.7699 | 274.315 | 19.1 | | 17.6499 | 17000 |
| ningxia | 1988 | 106.73 | 74.8199 | 206.65 | 21.0399 | | 24.3599 | 11000 |
| ningxia | 1989 | 135.12 | 96.2699 | 233.425 | 36.6 | | 43.39 | 17477 |
| ningxia | 1990 | 119.92 | 86.12 | | 34.93 | | 26.26 | |
| ningxia | 1991 | 104.14 | 77.9099 | 152.764 | 28.39 | | 43.7 | 52014 |
| ningxia | 1992 | 125.92 | 78.87 | 127.209 | 43.7 | 0 | 36.1499 | 24000 |
| ningxia | 1993 | 137.5 | 81.18 | 106.413 | 37.7899 | 0 | 34.59 | 19603 |
| ningxia | 1994 | 128.259 | 76.5499 | 99.333 | 53.64 | 0 | 35.0499 | 12209 |
| ningxia | 1995 | 133.66 | 78.1299 | 95.157 | 68.3599 | 0 | 39.42 | 75741.47 |
| qinghai | 1987 | 105.72 | 69.12 | 250.275 | 10.13 | | 23.52 | 11000 |
| qinghai | 1988 | 104.54 | 61.5 | 174.737 | 11.75 | | 26.42 | 7000 |
| qinghai | 1989 | 126.88 | 66.1599 | 183.713 | 11.08 | | 19.39 | 6735.6499 |

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| Province Name | year | Industrial COD discharge intensity (ton/million yuan output) | waste gas emission (billion m3) | Waste gas emission intensity (m3/yuan output) | industrial waste gas emission (billion m3) | Industrial waste gas emission intensity (m3/yuan output) | SO2 discharge (ton) | SO2 discharge intensity (ton/million yuan output) |
|---|---|---|---|---|---|---|---|---|
| jiangxi | 1995 | 3.4613219 | 264.5 | 6.24641 | 239.599 | 5.65837 | 362511 | 8.56103 |
| jilin | 1987 | 9.0765879 | 279.199 | 8.59045 | | | 216000 | 6.6459 |
| jilin | 1988 | 7.9911381 | 293.3 | 8.08207 | | | 238000 | 6.55824 |
| jilin | 1989 | 8.5868353 | 277.699 | 7.29937 | | | 278169 | 7.3117 |
| jilin | 1990 | | 289.5 | | | | 260000 | |
| jilin | 1991 | 7.2198373 | 370.399 | 10.0379 | 292.6 | 7.92953 | 250000 | 6.77506 |
| jilin | 1992 | 6.7475728 | 336 | 8.15533 | 262.5 | 6.37135 | 234477 | 5.69118 |
| jilin | 1993 | 4.2959364 | 426.399 | 7.52835 | 288.6 | 5.09541 | 285771 | 5.04546 |
| jilin | 1994 | 4.0400331 | 426.1 | 7.00234 | 284.199 | 4.67041 | 268208 | 4.40761 |
| jilin | 1995 | 4.5489322 | 443.399 | 6.98554 | 316.3 | 4.98314 | 316529 | 4.98675 |
| liaoning | 1987 | 4.3327036 | 783.2 | 7.34496 | | | 858000 | 8.04644 |
| liaoning | 1988 | 4.0728568 | 827.6 | 7.00768 | | | 961000 | 8.13724 |
| liaoning | 1989 | 4.5548969 | 826.899 | 6.69111 | | | 1052272 | 8.51478 |
| liaoning | 1990 | | 813.5 | | | | 970000 | |
| liaoning | 1991 | 3.6917583 | 895.799 | 6.9388 | 783 | 6.06506 | 1070000 | 8.28814 |
| liaoning | 1992 | 2.6657163 | 944.5 | 6.732 | 847.399 | 6.03991 | 1074127 | 7.65593 |
| liaoning | 1993 | 2.3906284 | 964.5 | 6.51577 | 859.1 | 5.80373 | 1081120 | 7.30361 |
| liaoning | 1994 | 2.0553878 | 950.7 | 6.18154 | 837.899 | 5.4481 | 1047799 | 6.81289 |
| liaoning | 1995 | 1.9643727 | 968.6 | 5.77725 | 849.799 | 5.06866 | 1085117 | 6.47222 |
| ningxia | 1987 | 5.3131641 | 50.7 | 15.8457 | | | 115000 | 35.9419 |
| ningxia | 1988 | 3.0381704 | 58.7 | 16.2127 | | | 150000 | 41.4295 |
| ningxia | 1989 | 4.2376355 | 53.8999 | 13.069 | | | 105833 | 25.6612 |
| ningxia | 1990 | | 61.1 | | | | 130000 | |
| ningxia | 1991 | 10.198823 | 89.7999 | 17.6078 | 73.2999 | 14.3725 | 120000 | 23.5294 |
| ningxia | 1992 | 3.8709677 | 102.099 | 16.4677 | 74.7 | 12.0483 | 217764 | 35.1232 |
| ningxia | 1993 | 2.5696349 | 110.599 | 14.4978 | 80.0999 | 10.4998 | 237934 | 31.1892 |
| ningxia | 1994 | 1.5842676 | 101.5 | 13.1708 | 86.5 | 11.2244 | 222088 | 28.8186 |
| ningxia | 1995 | 9.2247949 | 108.5 | 13.2145 | 93.2 | 11.3511 | 232973 | 28.3745 |
| qinghai | 1987 | 3.9829673 | 32.5 | 11.7678 | | | 60000 | 21.7252 |
| qinghai | 1988 | 1.9888849 | 37.7 | 10.7115 | | | 31000 | 8.80791 |
| qinghai | 1989 | 1.8703552 | 39.6 | 10.9961 | | | 30937 | 8.59058 |

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| Province Name | year | Industrial SO2 discharge | Industrial SO2 discharge intensity (ton/million yuan output) | Total smoke discharge (ton) | smoke discharge intensity (ton/million yuan output) | Industrial Smoke discharge | Industrial smoke discharge intensity (ton/million yuan output) | industrial smoke treatment( ton) |
|---|---|---|---|---|---|---|---|---|
| jiangxi | 1995 | 281082 | 6.63801 | 382962 | 9.044 | 280303 | 6.61961 | 2634017 |
| jilin | 1987 | | | 839000 | 25.8144 | | | |
| jilin | 1988 | | | 799000 | 22.0169 | | | |
| jilin | 1989 | | | 900339 | 23.6655 | | | |
| jilin | 1990 | | | 860000 | | | | |
| jilin | 1991 | 170000 | 4.60704 | 550000 | 14.9051 | 340000 | 9.21409 | 3713669 |
| jilin | 1992 | 152751 | 3.70754 | 607264 | 14.7394 | 290647 | 7.05453 | 3531080 |
| jilin | 1993 | 188156 | 3.32201 | 685517 | 12.1032 | 342238 | 6.04242 | 3980184 |
| jilin | 1994 | 184309 | 3.02885 | 583981 | 9.59688 | 332540 | 5.46481 | 4130103 |
| jilin | 1995 | 201532 | 3.17503 | 647805 | 10.2058 | 367209 | 5.78519 | 5220736 |
| liaoning | 1987 | | | 1111000 | 10.4191 | | | |
| liaoning | 1988 | | | 1165000 | 9.86461 | | | |
| liaoning | 1989 | | | 1084239 | 8.77345 | | | |
| liaoning | 1990 | | | 1050000 | | | | |
| liaoning | 1991 | 800000 | 6.19674 | 1010000 | 7.82339 | 700000 | 5.42215 | 6399301 |
| liaoning | 1992 | 844102 | 6.0164 | 1077453 | 7.67963 | 720165 | 5.13303 | 7012403 |
| liaoning | 1993 | 822759 | 5.55823 | 1069222 | 7.22323 | 652670 | 4.40917 | 7622598 |
| liaoning | 1994 | 770776 | 5.01166 | 1011151 | 6.5746 | 592638 | 3.85339 | 7246512 |
| liaoning | 1995 | 815876 | 4.86632 | 973035 | 5.8037 | 604840 | 3.60759 | 7784447 |
| ningxia | 1987 | | | 98000 | 30.6288 | | | |
| ningxia | 1988 | | | 67000 | 18.5052 | | | |
| ningxia | 1989 | | | 127914 | 31.0152 | | | |
| ningxia | 1990 | | | 110000 | | | | |
| ningxia | 1991 | 120000 | 23.5294 | 80000 | 15.6862 | 70000 | 13.7254 | 956742 |
| ningxia | 1992 | 143321 | 23.1162 | 110851 | 17.8791 | 103890 | 16.7564 | 991443 |
| ningxia | 1993 | 163563 | 21.4404 | 135753 | 17.795 | 109002 | 14.2883 | 1044639 |
| ningxia | 1994 | 165562 | 21.4837 | 107439 | 13.9415 | 94600 | 12.2755 | 1073276 |
| ningxia | 1995 | 172729 | 21.0372 | 110829 | 13.4982 | 93881 | 11.434 | 1253271 |
| qinghai | 1987 | | | 75000 | 27.1565 | | | |
| qinghai | 1988 | | | 56000 | 15.911 | | | |
| qinghai | 1989 | | | 55515 | 15.4154 | | | |

CHINA DATA

| Province Name | year | Industrial dust discharge (ton) | Industrial dust discharge intensity (ton/million yuan output) | industrial dust recovery (ton) | Output Value of Waste Recycling (million yuan) | Coal Consumption (million T) | No. of Enterprises in Sample of Envir Data | Total Value of Industrial Output from sampling enterprises (million yuan)(1990 constant price, an index of 1.684 is used converting 1980 price to 1990) |
|---|---|---|---|---|---|---|---|---|
| jiangxi | 1995 | 228823 | 5.40386 | 613800 | 369.091 | 17.4699 | 1558 | 42344.3 |
| jilin | 1987 | 240000 | 7.38434 | 390000 | 1208.8 | 24.27 | 2674 | 32501.2 |
| jilin | 1988 | 190000 | 5.23557 | 380000 | 189.479 | 27.93 | 1262 | 36290.1 |
| jilin | 1989 | 200000 | 5.25702 | 370000 | 263.29 | 30.2399 | 1319 | 38044.3 |
| jilin | 1990 | 140000 | | | 289.73 | | | |
| jilin | 1991 | 110000 | 2.98102 | 522433 | 427.37 | 23.2899 | 1212 | 36900 |
| jilin | 1992 | 126870 | 3.07936 | 601810 | 384.418 | 21.3299 | 1133 | 41200 |
| jilin | 1993 | 111760 | 1.97319 | 628621 | 442.338 | 25.8799 | 1116 | 56639.1 |
| jilin | 1994 | 148954 | 2.44784 | 632066 | 455.36 | 25.9899 | 1084 | 60851 |
| jilin | 1995 | 148265 | 2.33584 | 990392 | 773.148 | 28.05 | 1140 | 63473.9 |
| liaoning | 1987 | 680000 | 6.37713 | 2190000 | 536.38 | 57.13 | 3534 | 106630 |
| liaoning | 1988 | 680000 | 5.75788 | 2310000 | 550.309 | 61.64 | 3477 | 118098 |
| liaoning | 1989 | 670000 | 5.42151 | 2360000 | 750.769 | 60.7899 | 3292 | 123581 |
| liaoning | 1990 | 690000 | | | 766.7 | | | |
| liaoning | 1991 | 560000 | 4.33772 | 2814370 | 1107.07 | 56.5799 | 3388 | 129100 |
| liaoning | 1992 | 479345 | 3.41657 | 275823 | 1307.89 | 60.4699 | 3019 | 140300 |
| liaoning | 1993 | 596754 | 4.03143 | 2879326 | 1452.98 | 62.39 | 3004 | 148025 |
| liaoning | 1994 | 430825 | 2.80126 | 2815584 | 2115.42 | 60.6899 | 2827 | 153796 |
| liaoning | 1995 | 398765 | 2.37845 | 2955900 | 3011.53 | 61.49 | 2726 | 167657 |
| ningxia | 1987 | 100000 | 31.2539 | 20000 | 0.13 | 4.87 | 460 | 3199.59 |
| ningxia | 1988 | 80000 | 22.0957 | | | 5.21 | 346 | 3620.59 |
| ningxia | 1989 | 30000 | 7.27407 | 10000 | 14.26 | 5.48 | 243 | 4124.23 |
| ningxia | 1990 | 120000 | | | 6.82 | | | |
| ningxia | 1991 | 40000 | 7.84313 | 29658 | 23.14 | 4.8 | 244 | 5100 |
| ningxia | 1992 | 55138 | 8.89322 | 106870 | 33.801 | 6.56 | 259 | 6200 |
| ningxia | 1993 | 59123 | 7.75006 | 95774 | 49.3449 | 7.15 | 256 | 7628.71 |
| ningxia | 1994 | 58630 | 7.60796 | 93857 | 33.4609 | 7.51 | 235 | 7706.39 |
| ningxia | 1995 | 54248 | 6.60703 | 87207 | 57.5 | 7.81 | 242 | 8210.63 |
| qinghai | 1987 | 70000 | 25.3461 | 30000 | 9.75 | 3.41 | 318 | 2761.76 |
| qinghai | 1988 | 200000 | 56.8252 | 160000 | 10.1199 | 3.45 | 270 | 3519.55 |
| qinghai | 1989 | 30000 | 8.33039 | 30000 | 7.5 | 3.35 | 286 | 3601.26 |

| Province Name | year | # of Enterprises paying for pollution discharge | Total pollution discharge fee collected (total levy; million yuan) | levy on waste water (million yuan) | levy on waste gas(million yuan) | levy on sewage water (million yuan) | Total # of environmental accidents | Compensation for environmental accidents (million yuan) |
|---|---|---|---|---|---|---|---|---|
| jiangxi | 1995 | 5211 | 55.6939 | 25.6719 | 12.01 | 5.83 | 81 | 1.231 |
| jilin | 1987 | 6929 | 47.4399 | 21.67 | 20.9899 | | 261 | 0.98 |
| jilin | 1988 | 9236 | 50.49 | 18.57 | 22.9899 | | 127 | 1.41 |
| jilin | 1989 | 10682 | 50.2 | 19.41 | 21.92 | | 76 | 2.21 |
| jilin | 1990 | 11881 | 56.8819 | | | | | |
| jilin | 1991 | 10115 | 55.2 | | | 0.31 | 30 | 1.587 |
| jilin | 1992 | 11209 | 84.3599 | 29.815 | 26.7769 | 3.194 | 24 | 0.321 |
| jilin | 1993 | 14137 | 72.8119 | 19.6149 | 19.715 | 9.6 | 25 | 1.436 |
| jilin | 1994 | 14143 | 74.7049 | 24.319 | 16.7159 | 6.072 | 32 | 1.892 |
| jilin | 1995 | 19948 | 88.151 | 27.829 | 18.2319 | 9.335 | 48 | 1.935 |
| liaoning | 1987 | 14434 | 142.199 | 68.4099 | 50.3699 | | 94 | 0.93 |
| liaoning | 1988 | 18489 | 149.53 | 66.4099 | 53.5499 | | 208 | 2.23 |
| liaoning | 1989 | 19665 | 160.599 | 68.9599 | 54.68 | | 107 | 3.63 |
| liaoning | 1990 | 19148 | 162.424 | | | | | |
| liaoning | 1991 | 20265 | 181.169 | | | 0.05 | 155 | 8.158 |
| liaoning | 1992 | 21493 | 221.954 | 101.898 | 57.6889 | 0.103 | 206 | 2.661 |
| liaoning | 1993 | 20884 | 244.085 | 102.542 | 56.8119 | 2.507 | 312 | 1.935 |
| liaoning | 1994 | 20656 | 266.88 | 106.649 | 51.071 | 20.436 | 209 | 2.296 |
| liaoning | 1995 | 23454 | 289.082 | 108.8 | 48.6619 | 21.393 | - | - |
| ningxia | 1987 | 752 | 4.02 | 2 | 1.96 | | 5 | 0.42 |
| ningxia | 1988 | 728 | 5.49 | 2.34 | 3.13 | | 3 | 0.03 |
| ningxia | 1989 | 658 | 5.32 | 2.37 | 2.62 | | 4 | 0.21 |
| ningxia | 1990 | 590 | 4.434 | | | | | |
| ningxia | 1991 | 660 | 4.746 | | | | 2 | |
| ningxia | 1992 | 894 | 9.17 | 3.49 | 4.02 | 0.01 | 7 | 0.119 |
| ningxia | 1993 | 1091 | 7.612 | 1.821 | 3.397 | 0 | 5 | 0.045 |
| ningxia | 1994 | 966 | 8.197 | 2.614 | 2.679 | 0.438 | 6 | 0.118 |
| ningxia | 1995 | 1402 | 10.112 | 4.031 | 2.405 | 0.963 | - | - |
| qinghai | 1987 | 279 | 2.78 | 0.94 | 0.81 | | 1 | 0.16 |
| qinghai | 1988 | 304 | 3.23 | 0.88 | 2.18 | | 9 | 0.25 |
| qinghai | 1989 | 404 | 2.66 | 0.63 | 1.84 | | 6 | 0.4 |

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| Province Name | year | Fine for environmental accidents (million yuan) | # of pollution complaint letters governments received | # of pollution complaint letters governments responded | # of citizen-visits to government offices for environmental issues |
|---|---|---|---|---|---|
| jiangxi | 1995 | 0.191 | 1260 | 1142 | 3621 |
| jilin | 1987 | 0.09 | 1394 | | 2702 |
| jilin | 1988 | 0.15 | 1501 | | 2933 |
| jilin | 1989 | 1.26 | 1518 | | 3623 |
| jilin | 1990 | | 1263 | | 3006 |
| jilin | 1991 | 0.243 | 996 | 831 | 2686 |
| jilin | 1992 | 0.039 | 1036 | 969 | 2423 |
| jilin | 1993 | 0.139 | 1047 | 864 | 2880 |
| jilin | 1994 | 0.135 | 1219 | 1180 | 2414 |
| jilin | 1995 | 0.091 | 1122 | 1045 | 3788 |
| liaoning | 1987 | 1.04 | 3347 | | 2591 |
| liaoning | 1988 | 14.91 | 3083 | | 3167 |
| liaoning | 1989 | 1.15 | 3592 | | 4253 |
| liaoning | 1990 | | 3036 | | 4284 |
| liaoning | 1991 | 0.176 | 3256 | 3057 | 5088 |
| liaoning | 1992 | 0.288 | 3284 | 3036 | 4879 |
| liaoning | 1993 | 0.297 | 2895 | 2757 | 5745 |
| liaoning | 1994 | 0.501 | 3153 | 3053 | 7266 |
| liaoning | 1995 | - | 4762 | 4739 | 8856 |
| ningxia | 1987 | | 155 | | 69 |
| ningxia | 1988 | | 139 | | 133 |
| ningxia | 1989 | 0.16 | 51 | | 24 |
| ningxia | 1990 | | 146 | | 695 |
| ningxia | 1991 | 0.04 | 159 | 142 | 221 |
| ningxia | 1992 | 0.01 | 149 | 149 | 262 |
| ningxia | 1993 | 0 | 147 | 144 | 170 |
| ningxia | 1994 | 0.052 | 118 | 97 | 1242 |
| ningxia | 1995 | - | 143 | 143 | 122 |
| qinghai | 1987 | 0.03 | 10 | | |
| qinghai | 1988 | | 47 | | 745 |
| qinghai | 1989 | 0.09 | 41 | | 1341 |

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| Province Name | year | Total Wastewater Discharge (million T) | Total Industrial Waste Water Discharge (million T) | Industrial wastewater discharge intensity (ton/10,000 yuan output) | Total Industrial Waste Water Treated (million T) | Of which: treated by city water treatment plant and centralized treatment facilities (million T) | Total Industrial Waste Water Meeting Discharge Standard (million T) | Industrial COD discharge (ton) |
|---|---|---|---|---|---|---|---|---|
| qinghai | 1990 | 122.59 | 68.65 | | 10.73 | | 17.75 | |
| qinghai | 1991 | 96.15 | 58.89 | 147.224 | 16.17 | | 27.21 | 4266 |
| qinghai | 1992 | 91.34 | 54.1099 | 120.244 | 19.0599 | 0 | 26.75 | 7000 |
| qinghai | 1993 | 92.0699 | 54.1 | 87.9195 | 24.5 | 0 | 26.82 | 3313 |
| qinghai | 1994 | 96.18 | 53.8999 | 90.7875 | 25.07 | 0 | 27.17 | 5400.05 |
| qinghai | 1995 | 94.4 | 50.2899 | 72.841 | 20.39 | 0 | 22.12 | 4035.5 |
| shaanxi | 1987 | 640.789 | 400 | 141.386 | 88.4699 | | 191.99 | 71000 |
| shaanxi | 1988 | 663.96 | 437.67 | 133.968 | 102.54 | | 181.41 | 73000 |
| shaanxi | 1989 | 665.919 | 414.089 | 117.346 | 109.06 | | 183.34 | 77386 |
| shaanxi | 1990 | 703.85 | 401.68 | | 140.19 | | 199.389 | |
| shaanxi | 1991 | 581.2 | 395.18 | 120.481 | 270.86 | 31.28 | 220.8 | 75934 |
| shaanxi | 1992 | 669.519 | 382.94 | 99.7239 | 320.329 | 37.92 | 229.31 | 56000 |
| shaanxi | 1993 | 698.389 | 363.519 | 84.0044 | 369.389 | 18.4899 | 223.449 | 50711.489 |
| shaanxi | 1994 | 749.09 | 371.6 | 81.0238 | 389.31 | 33.0399 | 248.78 | 64669.61 |
| shaanxi | 1995 | 768.97 | 406.519 | 73.9692 | 393.36 | 25.18 | 256.13 | 119975.39 |
| shandong | 1987 | 1327.7 | 938.11 | 102.761 | 232.71 | | 308.67 | 667000 |
| shandong | 1988 | 1438.7 | 978.71 | 87.898 | 277.13 | | 348.93 | 691000 |
| shandong | 1989 | 1371.65 | 913.6 | 74.4312 | 300.019 | | 344.29 | 582898.55 |
| shandong | 1990 | 1365.73 | 876.309 | | 324.94 | | 350.069 | |
| shandong | 1991 | 1370.51 | 887.269 | 66.4124 | 1115.28 | 7.44 | 379.209 | 637250 |
| shandong | 1992 | 1377.21 | 864.12 | 57.2264 | 1367.03 | 12.5 | 381.43 | 630000 |
| shandong | 1993 | 1423.22 | 853.5 | 48.8941 | 1405.28 | 9.09 | 416.069 | 581717.05 |
| shandong | 1994 | 1479.79 | 873.159 | 43.2535 | 1566.79 | 9.69 | 430.589 | 709417.98 |
| shandong | 1995 | 1586.8 | 953.429 | 42.3056 | 1809.8 | 17.8099 | 454.13 | 1067586 |
| shanghai | 1987 | 2009.69 | 1488.52 | 110.586 | 412.279 | | 1039.26 | 269000 |
| shanghai | 1988 | 1975.24 | 1401.93 | 95.0233 | 398.99 | | 973.059 | 250000 |
| shanghai | 1989 | 1933.23 | 1324.24 | 94.9427 | 397.94 | | 929.82 | 227301.57 |
| shanghai | 1990 | 1999.24 | 1332.18 | | 411.339 | | 964.47 | |
| shanghai | 1991 | 1958.07 | 1325.08 | 91.4485 | 986.299 | 110.81 | 865.94 | 247514 |
| shanghai | 1992 | 2028.73 | 1370.31 | 84.5354 | 1003.65 | 154.349 | 905.59 | 196000 |
| shanghai | 1993 | 2031.53 | 1280.82 | 71.7711 | 1054.96 | 143.91 | 907.21 | 167597 |

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| Province Name | year | Industrial COD discharge intensity (ton/million yuan output) | waste gas emission (billion m3) | Waste gas emission intensity (m3/yuan output) | industrial waste gas emission (billion m3) | Industrial waste gas emission intensity (m3/yuan output) | SO2 discharge (ton) | SO2 discharge intensity (ton/million yuan output) |
|---|---|---|---|---|---|---|---|---|
| qinghai | 1990 | | 38.7999 | | | | 30000 | |
| qinghai | 1991 | 1.0665 | 38.2 | 9.55 | 31 | 7.75 | 20000 | 5 |
| qinghai | 1992 | 1.5555555 | 37.8999 | 8.42222 | 33.1 | 7.35555 | 21306 | 4.73466 |
| qinghai | 1993 | 0.5384059 | 46.2 | 7.5081 | 39.7 | 6.45177 | 24272 | 3.94451 |
| qinghai | 1994 | 0.9095678 | 47.2 | 7.95022 | 39.7 | 6.68694 | 32681 | 5.50468 |
| qinghai | 1995 | 0.5845102 | 50.7 | 7.34349 | 44.2 | 6.40202 | 33009 | 4.78109 |
| shaanxi | 1987 | 2.5096142 | 167.5 | 5.92056 | | | 589000 | 20.8191 |
| shaanxi | 1988 | 2.2344932 | 183.199 | 5.60765 | | | 613000 | 18.7636 |
| shaanxi | 1989 | 2.1929896 | 174 | 4.93086 | | | 616190 | 17.4617 |
| shaanxi | 1990 | | 177.5 | | | | 590000 | |
| shaanxi | 1991 | 2.3150609 | 209.4 | 6.38414 | 163.5 | 4.98475 | 620000 | 18.9024 |
| shaanxi | 1992 | 1.4583333 | 211 | 5.49479 | 173.3 | 4.51302 | 668336 | 17.4045 |
| shaanxi | 1993 | 1.1718726 | 211.9 | 4.89671 | 176.4 | 4.07636 | 668391 | 15.4455 |
| shaanxi | 1994 | 1.4100596 | 219.8 | 4.79253 | 186 | 4.05555 | 826839 | 18.0284 |
| shaanxi | 1995 | 2.1830395 | 281.899 | 5.12937 | 237.8 | 4.32694 | 801976 | 14.5925 |
| shandong | 1987 | 7.306415 | 551.2 | 6.03792 | | | 1730000 | 18.9506 |
| shandong | 1988 | 6.2058763 | 613.299 | 5.50805 | | | 1909000 | 17.1447 |
| shandong | 1989 | 4.7488932 | 641.6 | 5.22713 | | | 1891519 | 15.4102 |
| shandong | 1990 | | 668.399 | | | | 1930000 | |
| shandong | 1991 | 4.7698353 | 714.799 | 5.35029 | 525.399 | 3.93263 | 2040000 | 15.2694 |
| shandong | 1992 | 4.1721854 | 797.5 | 5.28145 | 591.2 | 3.91523 | 2257122 | 14.9478 |
| shandong | 1993 | 3.3324615 | 821.6 | 4.70667 | 627.5 | 3.59473 | 2279883 | 13.0606 |
| shandong | 1994 | 3.5142329 | 874.2 | 4.33051 | 693.399 | 3.43488 | 2246935 | 11.1306 |
| shandong | 1995 | 4.7370961 | 917.6 | 4.07157 | 738.6 | 3.27731 | 2319157 | 10.2905 |
| shanghai | 1987 | 1.9984826 | 348.899 | 2.59208 | | | 434000 | 3.22431 |
| shanghai | 1988 | 1.6945104 | 355.199 | 2.40756 | | | 405000 | 2.7451 |
| shanghai | 1989 | 1.6296616 | 361.6 | 2.59252 | | | 390564 | 2.80018 |
| shanghai | 1990 | | 353.399 | | | | 420000 | |
| shanghai | 1991 | 1.7081711 | 461.699 | 3.18633 | 400 | 2.76052 | 480000 | 3.31262 |
| shanghai | 1992 | 1.2091301 | 511 | 3.15237 | 441.8 | 2.72547 | 513614 | 3.1685 |
| shanghai | 1993 | 0.939127 | 423.1 | 2.37083 | 385.899 | 2.16238 | 441205 | 2.47228 |

CHINA DATA

| Province Name | year | Industrial SO2 discharge | Industrial SO2 discharge intensity (ton/million yuan output) | Total smoke discharge (ton) | smoke discharge intensity (ton/million yuan output) | Industrial Smoke discharge | Industrial smoke discharge intensity (ton/million yuan output) | industrial smoke treatment( ton) |
|---|---|---|---|---|---|---|---|---|
| qinghai | 1990 | | | 70000 | | | | |
| qinghai | 1991 | 20000 | 5 | 80000 | 20 | 40000 | 10 | 224228 |
| qinghai | 1992 | 15797 | 3.51044 | 66482 | 14.7737 | 35438 | 7.87511 | 92748 |
| qinghai | 1993 | 16679 | 2.71055 | 90018 | 14.6291 | 42262 | 6.86812 | 69849 |
| qinghai | 1994 | 24095 | 4.05848 | 87384 | 14.7186 | 36257 | 6.10701 | 219313 |
| qinghai | 1995 | 26143 | 3.7866 | 92830 | 13.4456 | 38549 | 5.58351 | 273062 |
| shaanxi | 1987 | | | 515000 | 18.2035 | | | |
| shaanxi | 1988 | | | 528000 | 16.1618 | | | |
| shaanxi | 1989 | | | 477605 | 13.5345 | | | |
| shaanxi | 1990 | | | 490000 | | | | |
| shaanxi | 1991 | 510000 | 15.5487 | 450000 | 13.7195 | 370000 | 11.2804 | 2696177 |
| shaanxi | 1992 | 551142 | 14.3526 | 601322 | 15.6594 | 314990 | 8.20286 | 2451165 |
| shaanxi | 1993 | 559626 | 12.9321 | 523424 | 12.0956 | 382765 | 8.84517 | 2812373 |
| shaanxi | 1994 | 641515 | 13.9876 | 555525 | 12.1126 | 435837 | 9.50301 | 2745900 |
| shaanxi | 1995 | 652262 | 11.8683 | 697478 | 12.6911 | 476598 | 8.67204 | 2782847 |
| shandong | 1987 | | | 1157000 | 12.6739 | | | |
| shandong | 1988 | | | 1278000 | 11.4777 | | | |
| shandong | 1989 | | | 1295590 | 10.5552 | | | |
| shandong | 1990 | | | 1210000 | | | | |
| shandong | 1991 | 1260000 | 9.43113 | 1210000 | 9.05688 | 520000 | 3.89221 | 4660920 |
| shandong | 1992 | 1297509 | 8.59277 | 1253476 | 8.30116 | 524567 | 3.47395 | 5190636 |
| shandong | 1993 | 1375782 | 7.88139 | 1348164 | 7.72317 | 524679 | 3.0057 | 5505281 |
| shandong | 1994 | 1431424 | 7.09082 | 1300052 | 6.44004 | 565930 | 2.80343 | 6942953 |
| shandong | 1995 | 1581981 | 7.01957 | 1296243 | 5.75169 | 606252 | 2.69006 | 7754780 |
| shanghai | 1987 | | | 215000 | 1.5973 | | | |
| shanghai | 1988 | | | 213000 | 1.44372 | | | |
| shanghai | 1989 | | | 228983 | 1.64171 | | | |
| shanghai | 1990 | | | 190000 | | | | |
| shanghai | 1991 | 340000 | 2.34644 | 220000 | 1.51828 | 150000 | 1.03519 | 2556016 |
| shanghai | 1992 | 356158 | 2.19714 | 224974 | 1.38787 | 148091 | 0.91357 | 2584948 |
| shanghai | 1993 | 356713 | 1.99883 | 189293 | 1.0607 | 148037 | 0.82952 | 2791473 |

CHINA DATA

| Province Name | year | Industrial dust discharge (ton) | Industrial dust discharge intensity (ton/million yuan output) | industrial dust recovery (ton) | Output Value of Waste Recycling (million yuan) | Coal Consumption (million T) | No. of Enterprises in Sample of Envir Data | Total Value of Industrial Output from sampling enterprises (million yuan)(1990 constant price, an index of 1.684 is used converting 1980 price to 1990) |
|---|---|---|---|---|---|---|---|---|
| qinghai | 1990 | 30000 | | | 8.3 | | | |
| qinghai | 1991 | 10000 | 2.5 | 111273 | 16.84 | 2.16 | 270 | 4000 |
| qinghai | 1992 | 25848 | 5.744 | 92926 | 27.059 | 2.24 | 264 | 4500 |
| qinghai | 1993 | 27233 | 4.42571 | 83880 | 17.866 | 2.17 | 261 | 6153.35 |
| qinghai | 1994 | 28384 | 4.78091 | 56922 | 25.6409 | 2.76 | 253 | 5936.93 |
| qinghai | 1995 | 34250 | 4.96084 | 40582 | 20.1739 | 2.81 | 260 | 6904.06 |
| shaanxi | 1987 | 200000 | 7.06933 | 240000 | 31.1299 | 17.1 | 2022 | 28291.2 |
| shaanxi | 1988 | 200000 | 6.12189 | 220000 | 48.56 | 19.1499 | 2009 | 32669.5 |
| shaanxi | 1989 | 180000 | 5.10089 | 290000 | 49.6499 | 18.96 | 2126 | 35287.9 |
| shaanxi | 1990 | 150000 | | | 53.45 | | | |
| shaanxi | 1991 | 140000 | 4.26829 | 266725 | 75.6599 | 16.41 | 2044 | 32800 |
| shaanxi | 1992 | 132423 | 3.44851 | 372729 | 85.9759 | 17.3799 | 1979 | 38400 |
| shaanxi | 1993 | 135742 | 3.13681 | 349471 | 132.698 | 18.7899 | 1942 | 43273.8 |
| shaanxi | 1994 | 211145 | 4.60381 | 337682 | 153.43 | 19.37 | 1835 | 45863 |
| shaanxi | 1995 | 243653 | 4.43344 | 390830 | 155.747 | 21.12 | 1848 | 54957.9 |
| shandong | 1987 | 500000 | 5.47707 | 1170000 | 260.579 | 51.77 | 5526 | 91289.6 |
| shandong | 1988 | 670000 | 6.01727 | 1350000 | 340.529 | 55.7599 | 5725 | 111346 |
| shandong | 1989 | 540000 | 4.39939 | 1320000 | 474.86 | 58.75 | 5981 | 122744 |
| shandong | 1990 | 480000 | | | 532.34 | | | |
| shandong | 1991 | 440000 | 3.29341 | 1602316 | 881.919 | 45.9099 | 5773 | 133600 |
| shandong | 1992 | 346876 | 2.29719 | 1621700 | 1132.93 | 50.25 | 5302 | 151000 |
| shandong | 1993 | 335855 | 1.924 | 1701505 | 1108.05 | 54.09 | 5007 | 174560 |
| shandong | 1994 | 344196 | 1.70503 | 1691003 | 1199.8 | 59.4099 | 4912 | 201869 |
| shandong | 1995 | 389886 | 1.73 | 1879493 | 1497.45 | 64.4399 | 4710 | 225367 |
| shanghai | 1987 | 100000 | 0.74293 | 760000 | 185.41 | 23 | 3504 | 134602 |
| shanghai | 1988 | 90000 | 0.61002 | 910000 | 205.88 | 23.42 | 3414 | 147535 |
| shanghai | 1989 | 70000 | 0.50187 | 860000 | 211.99 | 24.16 | 3466 | 139477 |
| shanghai | 1990 | 70000 | | | 205.539 | | | |
| shanghai | 1991 | 70000 | 0.48309 | 890456 | 266.85 | 22.6999 | 3105 | 144900 |
| shanghai | 1992 | 68080 | 0.41998 | 1178591 | 394.47 | 24.4899 | 3071 | 162100 |
| shanghai | 1993 | 65804 | 0.36873 | 1234435 | 535.75 | 28.6099 | 2819 | 178460 |

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| Province Name | year | # of Enterprises paying for pollution discharge | Total pollution discharge fee collected (total levy; million yuan) | levy on waste water (million yuan) | levy on waste gas(million yuan) | levy on sewage water (million yuan) | Total # of environmental accidents | Compensation for environmental accidents (million yuan) |
|---|---|---|---|---|---|---|---|---|
| qinghai | 1990 | 444 | 3.575 | | | | | |
| qinghai | 1991 | 546 | 3.376 | | | 0.392 | 6 | 0.065 |
| qinghai | 1992 | 631 | 4.212 | 0.93 | 1.591 | 0.815 | 12 | 0.186 |
| qinghai | 1993 | 932 | 4.007 | 0.939 | 1.383 | 0.725 | 33 | 0.6 |
| qinghai | 1994 | 917 | 4.078 | 0.881 | 1.394 | 0.928 | 27 | 0.706 |
| qinghai | 1995 | 1090 | 4.879 | 1.824 | 0.726 | 1.312 | 24 | 0.294 |
| shaanxi | 1987 | 1875 | 19.41 | 13.55 | 4.18 | | 14 | 0.49 |
| shaanxi | 1988 | 2431 | 22.0599 | 15.15 | 4.63 | | 24 | 5.68 |
| shaanxi | 1989 | 3178 | 22.23 | 13.83 | 4.96 | | 35 | 1.05 |
| shaanxi | 1990 | 3343 | 24.638 | | | | | |
| shaanxi | 1991 | 3428 | 26.9209 | | | 0.217 | 34 | 0.912 |
| shaanxi | 1992 | 3683 | 32.256 | 17.059 | 5.854 | 0.241 | 35 | 0.428 |
| shaanxi | 1993 | 4667 | 36.4339 | 18.055 | 8.505 | 0.443 | 38 | 0.814 |
| shaanxi | 1994 | 6972 | 42.3969 | 19.829 | 7.177 | 3.072 | 74 | 1.059 |
| shaanxi | 1995 | 10808 | 57.858 | 24.997 | 7.8 | 4.496 | 69 | 0.996 |
| shandong | 1987 | 11903 | 120.94 | 70.5699 | 24.98 | | 246 | 10.57 |
| shandong | 1988 | 14988 | 150.31 | 76.95 | 32.71 | | 207 | 4.91 |
| shandong | 1989 | 17466 | 163.4 | 81.3199 | 24.3099 | | 249 | 11.56 |
| shandong | 1990 | 18086 | 163.515 | | | | | |
| shandong | 1991 | 20091 | 198.639 | | | 22.4899 | 204 | 2.71 |
| shandong | 1992 | 21898 | 235.33 | 81.6299 | 33.7999 | 21.27 | 140 | 1.376 |
| shandong | 1993 | 22008 | 259.269 | 87.31 | 36.89 | 20.2899 | 147 | 3.195 |
| shandong | 1994 | 22142 | 274.94 | 75.244 | 52.5139 | 19.0459 | 159 | 1.349 |
| shandong | 1995 | 24783 | 336.116 | 96.5589 | 65.963 | 17.788 | 191 | 2.556 |
| shanghai | 1987 | 4178 | 115.44 | 88.65 | 10.08 | | 118 | 0.77 |
| shanghai | 1988 | 4520 | 119.14 | 85.1599 | 9.69 | | 24 | 1.1 |
| shanghai | 1989 | 4666 | 115 | 75.9399 | 8.73 | | 27 | 1.23 |
| shanghai | 1990 | 4632 | 118.089 | | | | | |
| shanghai | 1991 | 3878 | 120.09 | | | | 35 | 1.404 |
| shanghai | 1992 | 2344 | 121 | 75.01 | 7.38 | 0 | 31 | 0.72 |
| shanghai | 1993 | 2078 | 121.209 | 70.4699 | 8.24 | 0 | 35 | 0.21 |

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| Province Name | year | Fine for environmental accidents (million yuan) | # of pollution complaint letters governments received | # of pollution complaint letters governments responded | # of citizen-visits to government offices for environmental issues |
|---|---|---|---|---|---|
| qinghai | 1990 | | 60 | | 2079 |
| qinghai | 1991 | | 23 | 18 | 41 |
| qinghai | 1992 | 0.003 | 44 | 38 | 131 |
| qinghai | 1993 | 0 | 47 | 22 | 252 |
| qinghai | 1994 | 0.01 | 67 | 59 | 196 |
| qinghai | 1995 | 0.01 | 102 | 92 | 379 |
| shaanxi | 1987 | 0.14 | 1136 | | 1125 |
| shaanxi | 1988 | 0.36 | 1396 | | 1844 |
| shaanxi | 1989 | 0.18 | 950 | | 1506 |
| shaanxi | 1990 | | 1195 | | 2405 |
| shaanxi | 1991 | 0.047 | 1184 | 1098 | 2050 |
| shaanxi | 1992 | 0.023 | 797 | 708 | 1640 |
| shaanxi | 1993 | 0.037 | 807 | 683 | 1361 |
| shaanxi | 1994 | 0.146 | 917 | 823 | 1855 |
| shaanxi | 1995 | 0.165 | 990 | 913 | 1587 |
| shandong | 1987 | 2.21 | 3313 | | 4857 |
| shandong | 1988 | 3.55 | 4529 | | 6615 |
| shandong | 1989 | 5.12 | 4068 | | 5668 |
| shandong | 1990 | | 4208 | | 4249 |
| shandong | 1991 | 0.84 | 3316 | 3005 | 4884 |
| shandong | 1992 | 0.43 | 3736 | 3648 | 5309 |
| shandong | 1993 | 0.474 | 4195 | 3979 | 6174 |
| shandong | 1994 | 0.431 | 5297 | 5179 | 7475 |
| shandong | 1995 | 0.417 | 2959 | 2880 | 6376 |
| shanghai | 1987 | 0.91 | 4607 | | 2274 |
| shanghai | 1988 | 0.47 | 3543 | | 1940 |
| shanghai | 1989 | 0.38 | 2773 | | 1225 |
| shanghai | 1990 | | 4114 | | 1719 |
| shanghai | 1991 | 0.411 | 3241 | 3043 | 1429 |
| shanghai | 1992 | 0.08 | 3189 | 3082 | 1127 |
| shanghai | 1993 | 0.7 | 3252 | 3204 | 957 |

CHINA DATA

| Province Name | year | Total Wastewater Discharge (million T) | Total Industrial Waste Water Discharge (million T) | Industrial wastewater discharge intensity (ton/10,000 yuan output) | Total Industrial Waste Water Treated (million T) | Of which: treated by city water treatment plant and centralized treatment facilities (million T) | Total Industrial Waste Water Meeting Discharge Standard (million T) | Industrial COD discharge (ton) |
|---|---|---|---|---|---|---|---|---|
| shanghai | 1994 | 2036.58 | 1181.26 | 61.5047 | 1132.24 | 153.9 | 836.83 | 163661 |
| shanghai | 1995 | 2245.15 | 1161.16 | 51.4613 | 1195.79 | 140.31 | 893.649 | 122878 |
| shanxi | 1987 | 743.84 | 608.85 | 211.062 | 126.01 | | 320.759 | 177000 |
| shanxi | 1988 | 773.029 | 610.19 | 186.583 | 135.599 | | 200.229 | 118000 |
| shanxi | 1989 | 788.62 | 600.5 | 167.593 | 116.04 | | 200.31 | 141718.35 |
| shanxi | 1990 | 773.399 | 584.299 | | 124.53 | | 268.81 | |
| shanxi | 1991 | 594.279 | 451.279 | 112.819 | 438.88 | 5.54 | 224.83 | 177434 |
| shanxi | 1992 | 583.009 | 405.779 | 94.8084 | 497.009 | 6.73 | 179.509 | 376000 |
| shanxi | 1993 | 582.22 | 408.56 | 90.5717 | 488.55 | 8.56 | 167.08 | 123920.21 |
| shanxi | 1994 | 619.5 | 390.35 | 83.5299 | 508.75 | 22.3299 | 193.169 | 85339.679 |
| shanxi | 1995 | 583.61 | 406.56 | 72.6048 | 601.82 | 24.0799 | 204.039 | 81259.24 |
| sichuan | 1987 | 3327.59 | 2461.88 | 345.773 | 364.139 | | 1333.32 | 432000 |
| sichuan | 1988 | 3444.94 | 2471.63 | 309.58 | 467.54 | | 1405.91 | 1016000 |
| sichuan | 1989 | 2918.61 | 2081.65 | 243.15 | 470.44 | | 855.71 | 341441.39 |
| sichuan | 1990 | 2874.07 | 1964.99 | | 481.279 | | 881.69 | |
| sichuan | 1991 | 2280.61 | 1956.6 | 186.166 | 843.44 | 19.6999 | 778.529 | 378930 |
| sichuan | 1992 | 2888.78 | 1990.02 | 182.57 | 877.639 | 25.6 | 811.809 | 435000 |
| sichuan | 1993 | 2919.4 | 1581.89 | 133.023 | 990.889 | 21.82 | 729.7 | 338352 |
| sichuan | 1994 | 2966.57 | 1600.75 | 137.473 | 953.48 | 27.66 | 710.34 | 348879.29 |
| sichuan | 1995 | 2968.4 | 1915.93 | 135.157 | 1151.61 | 22.1299 | 750.299 | 450260.6 |
| tianjin | 1987 | 460.769 | 311.12 | 62.606 | 58.31 | | 108.11 | 144000 |
| tianjin | 1988 | 429.949 | 282.75 | 51.0035 | 71.26 | | 123.81 | 151000 |
| tianjin | 1989 | 442.31 | 261.54 | 46.3825 | 67.95 | | 137.99 | 137786.35 |
| tianjin | 1990 | 440.75 | 228.65 | | 64.7999 | | 121.86 | |
| tianjin | 1991 | 425.6 | 226.009 | 46.2188 | 260.089 | 47.17 | 125.599 | 159171 |
| tianjin | 1992 | 410.839 | 210.84 | 39.3358 | 224.31 | 50.88 | 121.37 | 97000 |
| tianjin | 1993 | 412.899 | 212.9 | 34.7927 | 250.979 | 48.35 | 138.44 | 96091 |
| tianjin | 1994 | 419.88 | 219.88 | 29.522 | 399.449 | 52.7999 | 146.9 | 57899.36 |
| tianjin | 1995 | 650 | 218.97 | 28.1609 | 412.48 | 68.7099 | 159.849 | 89440 |
| tibet | 1987 | 1.25 | 1.25 | 247.426 | 0.2 | | | |
| tibet | 1988 | 1.75 | 0.67 | 44.2069 | 0.01 | | 0.01 | 0 |

CHINA DATA

| Province Name | year | Industrial COD discharge intensity (ton/million yuan output) | waste gas emission (billion m3) | Waste gas emission intensity (m3/yuan output) | industrial waste gas emission (billion m3) | Industrial waste gas emission intensity (m3/yuan output) | SO2 discharge (ton) | SO2 discharge intensity (ton/million yuan output) |
|---|---|---|---|---|---|---|---|---|
| shanghai | 1994 | 0.8521349 | 457.699 | 2.38311 | 418.399 | 2.17848 | 451885 | 2.35283 |
| shanghai | 1995 | 0.5445822 | 509.5 | 2.25805 | 462.5 | 2.04975 | 488564 | 2.16526 |
| shanxi | 1987 | 6.135837 | 388 | 13.4503 | | | 708000 | 24.5433 |
| shanxi | 1988 | 3.6082007 | 398.5 | 12.1853 | | | 804000 | 24.5846 |
| shanxi | 1989 | 3.9552193 | 447.399 | 12.4864 | | | 965496 | 26.946 |
| shanxi | 1990 | | 487 | | | | 780000 | |
| shanxi | 1991 | 4.43585 | 500.5 | 12.5124 | 413.399 | 10.335 | 650000 | 16.25 |
| shanxi | 1992 | 8.7850467 | 484.699 | 11.3247 | 391.699 | 9.15186 | 747890 | 17.474 |
| shanxi | 1993 | 2.7471301 | 533.299 | 11.8224 | 471.5 | 10.4524 | 1328826 | 29.4581 |
| shanxi | 1994 | 1.8261613 | 552.799 | 11.8292 | 454.1 | 9.71716 | 948786 | 20.3028 |
| shanxi | 1995 | 1.4511547 | 625.299 | 11.1668 | 4479 | 79.9874 | 1007234 | 17.9875 |
| sichuan | 1987 | 6.0674566 | 440.899 | 6.19245 | | | 1464000 | 20.5619 |
| sichuan | 1988 | 12.725699 | 505.399 | 6.33028 | | | 1489000 | 18.6501 |
| sichuan | 1989 | 3.9882696 | 514.7 | 6.01204 | | | 1496810 | 17.4837 |
| sichuan | 1990 | | 499.6 | | | | 1480000 | |
| sichuan | 1991 | 3.6054234 | 581.899 | 5.53663 | 476.1 | 4.52997 | 1890000 | 17.9828 |
| sichuan | 1992 | 3.9908256 | 633.299 | 5.81009 | 505.3 | 4.63577 | 1677168 | 15.3868 |
| sichuan | 1993 | 2.8452628 | 656.299 | 5.51894 | 558.899 | 4.69989 | 1783591 | 14.9985 |
| sichuan | 1994 | 2.9962046 | 643.899 | 5.52986 | 496.8 | 4.26656 | 1832402 | 15.7368 |
| sichuan | 1995 | 3.176318 | 723 | 5.10033 | 635.899 | 4.48589 | 2232803 | 15.751 |
| tianjin | 1987 | 2.8976851 | 129.8 | 2.61194 | | | 297000 | 5.97647 |
| tianjin | 1988 | 2.7237988 | 139 | 2.50733 | | | 341000 | 6.15109 |
| tianjin | 1989 | 2.4435556 | 147.199 | 2.6105 | | | 240731 | 4.26921 |
| tianjin | 1990 | | 133.5 | | | | 220000 | |
| tianjin | 1991 | 3.2550306 | 150.099 | 3.06952 | 135.8 | 2.77709 | 180000 | 3.68098 |
| tianjin | 1992 | 1.8097014 | 132.8 | 2.47761 | 116.9 | 2.18097 | 230217 | 4.29509 |
| tianjin | 1993 | 1.5703465 | 132.199 | 2.16045 | 120.2 | 1.96434 | 237640 | 3.88358 |
| tianjin | 1994 | 0.7773827 | 152 | 2.04082 | 140 | 1.8797 | 256990 | 3.45046 |
| tianjin | 1995 | 1.1502545 | 190.5 | 2.44994 | 170.5 | 2.19273 | 326375 | 4.19738 |
| tibet | 1987 | 0 | 0.3 | 5.93824 | | | | 0 |
| tibet | 1988 | 0 | | | | | 0 | 0 |

CHINA DATA

| Province Name | year | Industrial SO2 discharge | Industrial SO2 discharge intensity (ton/million yuan output) | Total smoke discharge (ton) | smoke discharge intensity (ton/million yuan output) | Industrial Smoke discharge | Industrial smoke discharge intensity (ton/million yuan output) | industrial smoke treatment( ton) |
|---|---|---|---|---|---|---|---|---|
| shanghai | 1994 | 362388 | 1.88684 | 184468 | 0.96047 | 140768 | 0.73293 | 3063866 |
| shanghai | 1995 | 381454 | 1.69056 | 185643 | 0.82275 | 133343 | 0.59096 | 3251564 |
| shanxi | 1987 | | | 1238000 | 42.9161 | | | |
| shanxi | 1988 | | | 950000 | 29.049 | | | |
| shanxi | 1989 | | | 814954 | 22.7445 | | | |
| shanxi | 1990 | | | 810000 | | | | |
| shanxi | 1991 | 510000 | 12.75 | 610000 | 15.25 | 420000 | 10.5 | 2750367 |
| shanxi | 1992 | 539973 | 12.6161 | 799257 | 18.6742 | 383202 | 8.95331 | 3443836 |
| shanxi | 1993 | 604764 | 13.4067 | 836650 | 18.5473 | 331868 | 7.35702 | 4099221 |
| shanxi | 1994 | 684255 | 14.6421 | 795090 | 17.0139 | 343275 | 7.34565 | 4809368 |
| shanxi | 1995 | 658291 | 11.7559 | 829776 | 14.8184 | 361509 | 6.45594 | 4832974 |
| sichuan | 1987 | | | 1083000 | 15.2107 | | | |
| sichuan | 1988 | | | 1095000 | 13.7151 | | | |
| sichuan | 1989 | | | 910049 | 10.6299 | | | |
| sichuan | 1990 | | | 800000 | | | | |
| sichuan | 1991 | 890000 | 8.46812 | 860000 | 8.18268 | 570000 | 5.4234 | 2655640 |
| sichuan | 1992 | 1123811 | 10.3101 | 977614 | 8.96893 | 556313 | 5.10378 | 3099690 |
| sichuan | 1993 | 1194180 | 10.042 | 1015295 | 8.53779 | 1237864 | 10.4094 | 3782838 |
| sichuan | 1994 | 1026969 | 8.81969 | 1092405 | 9.38166 | 493638 | 4.2394 | 4015871 |
| sichuan | 1995 | 1081970 | 7.63264 | 1380000 | 9.73507 | 597262 | 4.21332 | 4307148 |
| tianjin | 1987 | | | 186000 | 3.74284 | | | |
| tianjin | 1988 | | | 192000 | 3.46337 | | | |
| tianjin | 1989 | | | 87752 | 1.55622 | | | |
| tianjin | 1990 | | | 180000 | | | | |
| tianjin | 1991 | 150000 | 3.06748 | 190000 | 3.88548 | 90000 | 1.84049 | 935547 |
| tianjin | 1992 | 166217 | 3.10106 | 122415 | 2.28386 | 72415 | 1.35102 | 1054870 |
| tianjin | 1993 | 175640 | 2.87035 | 173376 | 2.83336 | 73376 | 1.19913 | 1082147 |
| tianjin | 1994 | 194990 | 2.61802 | 186125 | 2.49899 | 86125 | 1.15635 | 1387615 |
| tianjin | 1995 | 262375 | 3.3743 | 196899 | 2.53224 | 92899 | 1.19473 | 1810494 |
| tibet | 1987 | | | | 0 | | | |
| tibet | 1988 | | | | 0 | | | |

CHINA DATA

| Province Name | year | Industrial dust discharge (ton) | Industrial dust discharge intensity (ton/million yuan output) | industrial dust recovery (ton) | Output Value of Waste Recycling (million yuan) | Coal Consumption (million T) | No. of Enterprises in Sample of Envir Data | Total Value of Industrial Output from sampling enterprises (million yuan)(1990 constant price, an index of 1.684 is used converting 1980 price to 1990) |
|---|---|---|---|---|---|---|---|---|
| shanghai | 1994 | 61620 | 0.32083 | 1236098 | 595.09 | 30.76 | 2631 | 192059 |
| shanghai | 1995 | 62898 | 0.27875 | 1177207 | 662.759 | 29 | 2704 | 225637 |
| shanxi | 1987 | 370000 | 12.8263 | 910000 | 58.74 | 44.35 | 2398 | 28846.9 |
| shanxi | 1988 | 350000 | 10.7022 | 660000 | 86.43 | 49.25 | 2476 | 32703.2 |
| shanxi | 1989 | 270000 | 7.53543 | 830000 | 110.209 | 7.72 | 2494 | 35830.7 |
| shanxi | 1990 | 300000 | | | 127.599 | | | |
| shanxi | 1991 | 200000 | 5 | 962055 | 195.83 | 39.9099 | 2523 | 40000 |
| shanxi | 1992 | 197961 | 4.62525 | 870998 | 229.879 | 41.2599 | 2332 | 42800 |
| shanxi | 1993 | 218614 | 4.84635 | 985612 | 304.8 | 44.13 | 2212 | 45108.9 |
| shanxi | 1994 | 196659 | 4.20825 | 950782 | 277.38 | 48.77 | 2140 | 46731.7 |
| shanxi | 1995 | 220853 | 3.94406 | 1045482 | 340.805 | 49.35 | 2074 | 55996.2 |
| sichuan | 1987 | 510000 | 7.16296 | 900000 | 301.62 | 41 | 5492 | 71199.5 |
| sichuan | 1988 | 520000 | 6.51315 | 870000 | 355 | 47.7999 | 5419 | 79838.4 |
| sichuan | 1989 | 650000 | 7.59244 | 930000 | 453.259 | 58.2999 | 5485 | 85611.4 |
| sichuan | 1990 | 740000 | | | 609.309 | | | |
| sichuan | 1991 | 400000 | 3.80589 | 979719 | 954.529 | 34.24 | 5090 | 105100 |
| sichuan | 1992 | 396509 | 3.63769 | 1126088 | 866.1 | | 5202 | 109000 |
| sichuan | 1993 | 511612 | 4.30223 | 1080278 | 862.491 | 40.06 | 4994 | 118917 |
| sichuan | 1994 | 323485 | 2.77811 | 1171193 | 994.649 | 39.6899 | 4545 | 116440 |
| sichuan | 1995 | 429956 | 3.03308 | 1331235 | 1391.67 | 44.0799 | 4691 | 141755 |
| tianjin | 1987 | 60000 | 1.20736 | 130000 | 69.2399 | 9.27999 | 2350 | 49694.8 |
| tianjin | 1988 | 60000 | 1.0823 | 100000 | 59.06 | 12.57 | 2522 | 55437.2 |
| tianjin | 1989 | 70000 | 1.2414 | 170000 | 108.53 | 10.91 | 2452 | 56387.6 |
| tianjin | 1990 | 60000 | | | 85.06 | | | |
| tianjin | 1991 | 40000 | 0.81799 | 155203 | 74.4599 | 11.09 | 2397 | 48900 |
| tianjin | 1992 | 40952 | 0.76402 | 163109 | 88.56 | 12.73 | 2183 | 53600 |
| tianjin | 1993 | 36938 | 0.60365 | 179749 | 99.18 | 11.2899 | 2483 | 61190.9 |
| tianjin | 1994 | 33305 | 0.44716 | 185426 | 100.614 | 11.83 | 2916 | 74479.8 |
| tianjin | 1995 | 29695 | 0.38189 | 240628 | 125.343 | 14.74 | 3607 | 77756.6 |
| tibet | 1987 | | 0 | | | | 10 | 50.52 |
| tibet | 1988 | | 0 | | | | 16 | 151.56 |

CHINA DATA

| Province Name | year | # of Enterprises paying for pollution discharge | Total pollution discharge fee collected (total levy; million yuan) | levy on waste water (million yuan) | levy on waste gas(million yuan) | levy on sewage water (million yuan) | Total # of environmental accidents | Compensation for environmental accidents (million yuan) |
|---|---|---|---|---|---|---|---|---|
| shanghai | 1994 | 3242 | 124.01 | 69.76 | 8.33 | 0 | 24 | 0.11 |
| shanghai | 1995 | 3339 | 137.007 | 75.033 | 7.973 | 0 | 6 | 0 |
| shanxi | 1987 | 7539 | 39.49 | 20.67 | 12.91 | | 38 | 1.13 |
| shanxi | 1988 | 7331 | 48.92 | 21.92 | 17.68 | | 29 | 1.41 |
| shanxi | 1989 | 8486 | 51.53 | 22.25 | 18.19 | | 39 | 2.02 |
| shanxi | 1990 | 9391 | 65.4739 | | | | | |
| shanxi | 1991 | 10839 | 64.745 | | | 15.6419 | 83 | 0.27 |
| shanxi | 1992 | 12956 | 72.213 | 20.189 | 23.986 | 17.905 | 21 | 0.162 |
| shanxi | 1993 | 12421 | 78.152 | 20.654 | 28.5819 | 17.024 | 22 | 1.16 |
| shanxi | 1994 | 13810 | 82.982 | 19.5829 | 30.6559 | 17.074 | 42 | 1.416 |
| shanxi | 1995 | 14711 | 100.761 | 26.373 | 37.744 | 17.629 | - | - |
| sichuan | 1987 | 9614 | 85.7 | 45.1899 | 23.69 | | 351 | 4.69 |
| sichuan | 1988 | 11475 | 97.0799 | 44.6 | 28.23 | | 446 | 5.45 |
| sichuan | 1989 | 12447 | 95.2 | 41.92 | 29.2199 | | 436 | 7.56 |
| sichuan | 1990 | 12302 | 90.4429 | | | | | |
| sichuan | 1991 | 11443 | 101.158 | | | | 239 | 2.453 |
| sichuan | 1992 | 12375 | 117.795 | 53.46 | 28.6259 | 3.833 | 148 | 1.184 |
| sichuan | 1993 | 13909 | 133.573 | 61.5919 | 29.878 | 0.835 | 163 | 1.641 |
| sichuan | 1994 | 17084 | 140.568 | 53.8999 | 34.4469 | 5.832 | 204 | 1.739 |
| sichuan | 1995 | 19600 | 154.548 | 62.851 | 28.9219 | 8.076 | 192 | 2.229 |
| tianjin | 1987 | 1282 | 28.4499 | 13.81 | 8.36999 | | 35 | 2.17 |
| tianjin | 1988 | 2862 | 32.35 | 15.6999 | 10 | | 73 | 3.27 |
| tianjin | 1989 | 3175 | 32.14 | 16.5599 | 9.07 | | 202 | 4.55 |
| tianjin | 1990 | 2809 | 28.584 | | | | | |
| tianjin | 1991 | 3139 | 37.74 | | | | 14 | 0.1 |
| tianjin | 1992 | 3066 | 39.74 | 22.84 | 1.1 | 0 | 6 | 0.027 |
| tianjin | 1993 | 4113 | 42.7899 | 22.663 | 12.1549 | 0 | 15 | 0.107 |
| tianjin | 1994 | 4308 | 44.9699 | 23.53 | 12.6999 | 0 | 8 | 0.024 |
| tianjin | 1995 | 5987 | 52.1649 | 27.5559 | 15.0399 | 0 | 1 | 0 |
| tibet | 1987 | | | | | | | |
| tibet | 1988 | | | | | | | |

CHINA DATA

| Province Name | year | Fine for environmental accidents (million yuan) | # of pollution complaint letters governments received | # of pollution complaint letters governments responded | # of citizen-visits to government offices for environmental issues |
|---|---|---|---|---|---|
| shanghai | 1994 | 0.06 | 3262 | 3052 | 1501 |
| shanghai | 1995 | 0.036 | 702 | 700 | 172 |
| shanxi | 1987 | 0.29 | 913 | | 1130 |
| shanxi | 1988 | 0.45 | 1342 | | 2180 |
| shanxi | 1989 | 0.47 | 1393 | | 2292 |
| shanxi | 1990 | | 1388 | | 1586 |
| shanxi | 1991 | 0.215 | 1112 | 843 | 2655 |
| shanxi | 1992 | 0.049 | 1100 | 869 | 3634 |
| shanxi | 1993 | 0.009 | 904 | 736 | 2687 |
| shanxi | 1994 | 0.03 | 1856 | 1515 | 5384 |
| shanxi | 1995 | - | 703 | 659 | 1784 |
| sichuan | 1987 | 0.26 | 5730 | | 6078 |
| sichuan | 1988 | 0.31 | 3735 | | 5553 |
| sichuan | 1989 | 0.54 | 3764 | | 4657 |
| sichuan | 1990 | | 4687 | | 4985 |
| sichuan | 1991 | 0.179 | 3610 | 3110 | 4777 |
| sichuan | 1992 | 0.214 | 3797 | 3614 | 4249 |
| sichuan | 1993 | 0.047 | 3554 | 3407 | 5377 |
| sichuan | 1994 | 0.331 | 4160 | 3584 | 6631 |
| sichuan | 1995 | 0.369 | 4528 | 4212 | 5289 |
| tianjin | 1987 | 1.62 | 1517 | | 660 |
| tianjin | 1988 | 2.43 | 1421 | | 677 |
| tianjin | 1989 | 2.34 | 1159 | | 949 |
| tianjin | 1990 | | 1490 | | 830 |
| tianjin | 1991 | 0.044 | 912 | 863 | 886 |
| tianjin | 1992 | 0.02 | 396 | 870 | 1160 |
| tianjin | 1993 | 0.025 | 1016 | 982 | 1617 |
| tianjin | 1994 | 0.045 | 1061 | 1028 | 1302 |
| tianjin | 1995 | 0 | 350 | 343 | 95 |
| tibet | 1987 | | 1 | | 2 |
| tibet | 1988 | | | | |

CHINA DATA

| Province Name | year | Total Wastewater Discharge (million T) | Total Industrial Waste Water Discharge (million T) | Industrial wastewater discharge intensity (ton/10,000 yuan output) | Total Industrial Waste Water Treated (million T) | Of which: treated by city water treatment plant and centralized treatment facilities (million T) | Total Industrial Waste Water Meeting Discharge Standard (million T) | Industrial COD discharge (ton) |
|---|---|---|---|---|---|---|---|---|
| tibet | 1989 | 1.94 | 1.26 | 142.057 | 0.25 | | | |
| tibet | 1990 | 2 | 1.29 | | 0.2 | | | |
| tibet | 1991 | 7.95 | 1.41 | ERR | 0.02 | | | 228 |
| tibet | 1992 | 15 | 1.8 | ERR | 0 | 0 | 0 | 1000 |
| tibet | 1993 | 40.77 | 25.78 | 2224.33 | 0.03 | 0 | 0 | 2517.3 |
| tibet | 1994 | 42 | 27.1099 | 2088.75 | 1.84 | 0 | 0.05 | 2430.52 |
| tibet | 1995 | 42 | 21.55 | 2148.76 | 0.47 | 0 | 0 | 591.95 |
| xinjiang | 1987 | 196.47 | 147.13 | 126.806 | 46.35 | | 58.46 | 71000 |
| xinjiang | 1988 | 200.36 | 153.83 | 117.112 | 60.6899 | | 76.68 | 69000 |
| xinjiang | 1989 | 217.84 | 162.31 | 112.158 | 68.64 | | 69.7 | 77957.789 |
| xinjiang | 1990 | 223.47 | 155.009 | | 67.6299 | | 67.04 | |
| xinjiang | 1991 | 250.87 | 167.639 | 104.124 | 124.069 | 3.14 | 45.5499 | 88039 |
| xinjiang | 1992 | 288.009 | 186.24 | 104.629 | 52.4799 | 9.77 | 50.35 | 87000 |
| xinjiang | 1993 | 334.04 | 167.94 | 78.4218 | 108.959 | 17.7199 | 59.59 | 83444.419 |
| xinjiang | 1994 | 357.41 | 179.43 | 74.7064 | 113.05 | 18.21 | 57.96 | 99259.649 |
| xinjiang | 1995 | 398.269 | 190.009 | 76.0948 | 130.009 | 20.6099 | 66.6299 | 262494.06 |
| yunnan | 1987 | 563.019 | 464.25 | 304.285 | 99.0499 | | 121.3 | 170000 |
| yunnan | 1988 | 556.7 | 415.42 | 243.28 | 110.11 | | 142.169 | 138000 |
| yunnan | 1989 | 566.799 | 434.259 | 228.491 | 128.62 | | 159.66 | 150451.54 |
| yunnan | 1990 | 469.449 | 424.22 | | 107.59 | | 136.94 | |
| yunnan | 1991 | 598 | 435.069 | 171.287 | 327.779 | 0.06 | 146.039 | 195249 |
| yunnan | 1992 | 635.809 | 440.459 | 150.327 | 350.36 | 0.1 | 137.15 | 172000 |
| yunnan | 1993 | 681.6 | 451.49 | 127.608 | 360.13 | 0 | 135.27 | 200470.91 |
| yunnan | 1994 | 764.09 | 459.899 | 106.992 | 437.38 | 0 | 145.639 | 238191.32 |
| yunnan | 1995 | 860.669 | 489.37 | 102.705 | 438.279 | 0 | 147.729 | 253049.84 |
| zhejiang | 1987 | 1384.91 | 1092.18 | 215.326 | 291.49 | | 616.259 | 417000 |
| zhejiang | 1988 | 1499.11 | 1046.3 | 110.87 | 251.449 | | 586.72 | 390000 |
| zhejiang | 1989 | 1476.34 | 1074.22 | 173.761 | 287.8 | | 674.899 | 321981 |
| zhejiang | 1990 | 1462.35 | 1072.47 | | 282.529 | | 649.539 | |
| zhejiang | 1991 | 1352.83 | 1020.49 | 148.542 | 404.49 | 41.18 | 635.149 | 354321 |
| zhejiang | 1992 | 1760.1 | 1166.26 | 147.069 | 448.37 | 43.99 | 785.009 | 317000 |

CHINA DATA

| Province Name | year | Industrial COD discharge intensity (ton/million yuan output) | waste gas emission (billion m3) | Waste gas emission intensity (m3/yuan output) | industrial waste gas emission (billion m3) | Industrial waste gas emission intensity (m3/yuan output) | SO2 discharge (ton) | SO2 discharge intensity (ton/million yuan output) |
|---|---|---|---|---|---|---|---|---|
| tibet | 1989 | 0 | 0.5 | 5.63721 | | | 880 | 9.92149 |
| tibet | 1990 | | 0.6 | | | | | |
| tibet | 1991 | | 0.8 | | 0.7 | | 1000 | |
| tibet | 1992 | | 1.1 | | 0.9 | | 1400 | |
| tibet | 1993 | 21.719585 | 1.5 | 12.9421 | 1 | 8.62812 | 1900 | 16.3934 |
| tibet | 1994 | 18.726558 | 1.8 | 13.8685 | 1.2 | 9.2457 | 2100 | 16.1799 |
| tibet | 1995 | 5.902383 | 1.8 | 17.9479 | 0.9 | 8.97397 | 2100 | 20.9392 |
| xinjiang | 1987 | 6.1192336 | 89.5999 | 7.7223 | | | 116000 | 9.99762 |
| xinjiang | 1988 | 5.2530604 | 98.0999 | 7.46848 | | | 122000 | 9.28801 |
| xinjiang | 1989 | 5.3870046 | 101.3 | 6.99998 | | | 150748 | 10.4169 |
| xinjiang | 1990 | | 107.099 | | | | 160000 | |
| xinjiang | 1991 | 5.4682608 | 147.199 | 9.14285 | 127.599 | 7.92546 | 220000 | 13.6645 |
| xinjiang | 1992 | 4.8876404 | 172.3 | 9.67977 | 152.8 | 8.58426 | 235109 | 13.2083 |
| xinjiang | 1993 | 3.8965516 | 178.199 | 8.32129 | 149 | 6.95775 | 305136 | 14.2487 |
| xinjiang | 1994 | 4.1327157 | 180.199 | 7.5027 | 158.4 | 6.59504 | 274968 | 11.4484 |
| xinjiang | 1995 | 10.512314 | 240 | 9.61147 | 173.5 | 6.94829 | 349330 | 13.9899 |
| yunnan | 1987 | 11.142397 | 129.699 | 8.50099 | | | 302000 | 19.7941 |
| yunnan | 1988 | 8.0816315 | 138.8 | 8.12848 | | | 281000 | 16.456 |
| yunnan | 1989 | 7.9161869 | 144.099 | 7.58199 | | | 229138 | 12.0563 |
| yunnan | 1990 | | 155.9 | | | | 230000 | |
| yunnan | 1991 | 7.6869685 | 153.699 | 6.05118 | 119.2 | 4.69291 | 230000 | 9.05511 |
| yunnan | 1992 | 5.8703071 | 174 | 5.93856 | 142.599 | 4.86689 | 249131 | 8.50276 |
| yunnan | 1993 | 5.6660835 | 174.8 | 4.94052 | 144.599 | 4.08695 | 315627 | 8.92084 |
| yunnan | 1994 | 5.5413358 | 191.9 | 4.4644 | 153.9 | 3.58036 | 330886 | 7.6978 |
| yunnan | 1995 | 5.3108444 | 210.699 | 4.42203 | 167.4 | 3.51328 | 359435 | 7.54358 |
| zhejiang | 1987 | 8.2212716 | 251.099 | 4.9505 | | | 359000 | 7.07778 |
| zhejiang | 1988 | 4.1326097 | 243.099 | 2.57599 | | | 415000 | 4.39752 |
| zhejiang | 1989 | 5.2082415 | 255.099 | 4.1264 | | | 465407 | 7.52824 |
| zhejiang | 1990 | | 253.699 | | | | 440000 | |
| zhejiang | 1991 | 5.1575109 | 467.6 | 6.8064 | 252.4 | 3.67394 | 420000 | 6.11353 |
| zhejiang | 1992 | 3.9974779 | 313.6 | 3.9546 | 280.899 | 3.54224 | 511823 | 6.45426 |

CHINA DATA

| Province Name | year | Industrial SO2 discharge | Industrial SO2 discharge intensity (ton/million yuan output) | Total smoke discharge (ton) | smoke discharge intensity (ton/million yuan output) | Industrial Smoke discharge | Industrial smoke discharge intensity (ton/million yuan output) | industrial smoke treatment( ton) |
|---|---|---|---|---|---|---|---|---|
| tibet | 1989 | | | 34 | 0.38333 | | | |
| tibet | 1990 | | | | | | | |
| tibet | 1991 | | | 0 | | | | 210 |
| tibet | 1992 | 1296 | | 60 | | 51 | | 220 |
| tibet | 1993 | 1748 | 15.0819 | 98 | 0.84555 | 94 | 0.81104 | 251 |
| tibet | 1994 | 1814 | 13.9764 | 320 | 2.46552 | 291 | 2.24208 | 251 |
| tibet | 1995 | 1884 | 18.7855 | 320 | 3.19074 | 4866 | 48.5192 | 1199 |
| xinjiang | 1987 | | | 107000 | 9.22194 | | | |
| xinjiang | 1988 | | | 134000 | 10.2015 | | | |
| xinjiang | 1989 | | | 133143 | 9.20038 | | | |
| xinjiang | 1990 | | | 190000 | | | | |
| xinjiang | 1991 | 160000 | 9.93788 | 230000 | 14.2857 | 130000 | 8.07453 | 321979 |
| xinjiang | 1992 | 174775 | 9.81882 | 233022 | 13.0911 | 140238 | 7.87853 | 351617 |
| xinjiang | 1993 | 135319 | 6.3189 | 266941 | 12.4651 | 164231 | 7.66899 | 314505 |
| xinjiang | 1994 | 182448 | 7.59629 | 288319 | 12.0042 | 148439 | 6.18031 | 250032 |
| xinjiang | 1995 | 222000 | 8.89061 | 338917 | 13.5728 | 172195 | 6.89603 | 324519 |
| yunnan | 1987 | | | 296000 | 19.4008 | | | |
| yunnan | 1988 | | | 247000 | 14.4649 | | | |
| yunnan | 1989 | | | 264008 | 13.891 | | | |
| yunnan | 1990 | | | 290000 | | | | |
| yunnan | 1991 | 200000 | 7.87401 | 270000 | 10.6299 | 120000 | 4.7244 | 542175 |
| yunnan | 1992 | 198936 | 6.78962 | 191411 | 6.53279 | 149630 | 5.10682 | 971938 |
| yunnan | 1993 | 258533 | 7.30714 | 257408 | 7.27534 | 181836 | 5.13938 | 1113438 |
| yunnan | 1994 | 249415 | 5.80244 | 255065 | 5.93388 | 161103 | 3.74793 | 1208612 |
| yunnan | 1995 | 258454 | 5.42426 | 279718 | 5.87053 | 161039 | 3.37978 | 1101948 |
| zhejiang | 1987 | | | 311000 | 6.13145 | | | |
| zhejiang | 1988 | | | 360000 | 3.81471 | | | |
| zhejiang | 1989 | | | 290181 | 4.69385 | | | |
| zhejiang | 1990 | | | 280000 | | | | |
| zhejiang | 1991 | 340000 | 4.94905 | 230000 | 3.34788 | 170000 | 2.47452 | 1652125 |
| zhejiang | 1992 | 411160 | 5.18486 | 284059 | 3.58208 | 180380 | 2.27465 | 2474308 |

CHINA DATA

| Province Name | year | Industrial dust discharge (ton) | Industrial dust discharge intensity (ton/million yuan output) | industrial dust recovery (ton) | Output Value of Waste Recycling (million yuan) | Coal Consumption (million T) | No. of Enterprises in Sample of Envir Data | Total Value of Industrial Output from sampling enterprises (million yuan)(1990 constant price, an index of 1.684 is used converting 1980 price to 1990) |
|---|---|---|---|---|---|---|---|---|
| tibet | 1989 | 10000 | 112.744 | | 0.25 | | 15 | 88.6962 |
| tibet | 1990 | 10000 | | | | | | |
| tibet | 1991 | 10000 | | 4720 | | | 18 | |
| tibet | 1992 | 13514 | | 4720 | | | 20 | |
| tibet | 1993 | 14658 | 126.471 | 4953 | 0.08 | 0 | 29 | 115.9 |
| tibet | 1994 | 14715 | 113.375 | 4989 | 0 | 0 | 31 | 129.789 |
| tibet | 1995 | 11315 | 112.822 | 492 | 0 | 0.03 | 23 | 100.29 |
| xinjiang | 1987 | 130000 | 11.2042 | 80000 | 91.48 | 6.97 | 1694 | 11602.7 |
| xinjiang | 1988 | 110000 | 8.37444 | 80000 | 137.419 | 9.09 | 1345 | 13135.2 |
| xinjiang | 1989 | 110000 | 7.60117 | 100000 | 83.0699 | 9.49 | 1598 | 14471.4 |
| xinjiang | 1990 | 80000 | | | 148.43 | | | |
| xinjiang | 1991 | 80000 | 4.96894 | 175400 | 241.919 | 8.43 | 1322 | 16100 |
| xinjiang | 1992 | 116480 | 6.54382 | 206858 | 306.435 | 9.26 | 1229 | 17800 |
| xinjiang | 1993 | 85830 | 4.00794 | 201204 | 231.75 | 9.42 | 886 | 21414.9 |
| xinjiang | 1994 | 125130 | 5.20983 | 159436 | 193.185 | 10.6 | 860 | 24018 |
| xinjiang | 1995 | 132256 | 5.29656 | 180216 | 320.466 | 11.89 | 884 | 24970.1 |
| yunnan | 1987 | 290000 | 19.0076 | 330000 | 68.62 | 14.9 | 1070 | 15257 |
| yunnan | 1988 | 130000 | 7.61313 | 470000 | 99.5499 | 16.77 | 1105 | 17075.7 |
| yunnan | 1989 | 150000 | 7.89242 | 470000 | 86.98 | 15.82 | 1163 | 19005.5 |
| yunnan | 1990 | 150000 | | | 104.11 | | | |
| yunnan | 1991 | 120000 | 4.7244 | 605504 | 179 | 11.67 | 1183 | 25400 |
| yunnan | 1992 | 108739 | 3.71122 | 625254 | 201.897 | 13.84 | 1194 | 29300 |
| yunnan | 1993 | 126909 | 3.58693 | 762737 | 237.709 | 15.09 | 1230 | 35380.8 |
| yunnan | 1994 | 140168 | 3.26089 | 807455 | 322.054 | 15.63 | 1221 | 42984.4 |
| yunnan | 1995 | 178117 | 3.7382 | 842411 | 376.19 | 16.66 | 1373 | 47647.7 |
| zhejiang | 1987 | 460000 | 9.06902 | 290000 | 74.4 | 16.21 | 4670 | 50722 |
| zhejiang | 1988 | 340000 | 3.60278 | 430000 | 76.81 | 17.3099 | 4737 | 94371.3 |
| zhejiang | 1989 | 380000 | 6.14673 | 520000 | 123.43 | 17.3999 | 4748 | 61821.4 |
| zhejiang | 1990 | 380000 | | | 134.61 | | | |
| zhejiang | 1991 | 160000 | 2.32896 | 452626 | 237.789 | 16.48 | 3776 | 68700 |
| zhejiang | 1992 | 256608 | 3.23591 | 574958 | 299.56 | 18.89 | 3661 | 79300 |

CHINA DATA

| Province Name | year | # of Enterprises paying for pollution discharge | Total pollution discharge fee collected (total levy; million yuan) | levy on waste water (million yuan) | levy on waste gas(million yuan) | levy on sewage water (million yuan) | Total # of environmental accidents | Compensation for environmental accidents (million yuan) |
|---|---|---|---|---|---|---|---|---|
| tibet | 1989 | | | | | | | |
| tibet | 1990 | | | | | | | |
| tibet | 1991 | 29 | 0.1 | | | 0.038 | | |
| tibet | 1992 | 26 | 0.15 | 0.135 | 0.015 | 0.018 | 0 | 0 |
| tibet | 1993 | 313 | 0.284 | 0.116 | 0.012 | 0.149 | 0 | 0 |
| tibet | 1994 | 30 | 0.255 | 0.196 | 0.039 | 0.009 | 0 | 0 |
| tibet | 1995 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| xinjiang | 1987 | 689 | 13.08 | 7.44 | 3.56 | | 6 | 0.01 |
| xinjiang | 1988 | 1045 | 13.77 | 7.97 | 5.74 | | 11 | 0.05 |
| xinjiang | 1989 | 1606 | 16.8099 | 8.63 | 7.92 | | 6 | 0.01 |
| xinjiang | 1990 | 1121 | 16.884 | | | | | |
| xinjiang | 1991 | 1765 | 20.0799 | | | | 21 | 0.08 |
| xinjiang | 1992 | 2813 | 24.6999 | 12.14 | 9.77 | 0 | 11 | 0.8 |
| xinjiang | 1993 | 3003 | 29.363 | 13.929 | 11.524 | 0 | 18 | 0.43 |
| xinjiang | 1994 | 2958 | 33.356 | 15.375 | 12.255 | 0 | 15 | 0.077 |
| xinjiang | 1995 | 3659 | 52.8999 | 27.778 | 14.292 | 0.35 | 14 | 0.775 |
| yunnan | 1987 | 1572 | 18.48 | 11.68 | 5.43 | | 97 | 3.08 |
| yunnan | 1988 | 1751 | 23.18 | 14.15 | 7.45 | | 51 | 1.49 |
| yunnan | 1989 | 2225 | 25.46 | 15.1999 | 9.03999 | | 76 | 2.71 |
| yunnan | 1990 | 2137 | 32.1019 | | | | | |
| yunnan | 1991 | 1992 | 36.066 | | | | 54 | 0.716 |
| yunnan | 1992 | 1774 | 35.6709 | 23.3359 | 9.60799 | 0.007 | 50 | 0.389 |
| yunnan | 1993 | 3877 | 45.82 | 29.153 | 11.645 | 0.57 | 99 | 7.288 |
| yunnan | 1994 | 5158 | 53.597 | 33.788 | 12.119 | 0.87 | 108 | 0.737 |
| yunnan | 1995 | 6695 | 65.826 | 38.566 | 15.863 | 1.533 | - | - |
| zhejiang | 1987 | 6655 | 51.6199 | 33.53 | 10.06 | | 249 | 2.82 |
| zhejiang | 1988 | 7554 | 56.2299 | 34.7 | 11.83 | | 214 | 2.81 |
| zhejiang | 1989 | 8613 | 57.1899 | 33.95 | 12.27 | | 193 | 3.81 |
| zhejiang | 1990 | 8170 | 55.622 | | | | | |
| zhejiang | 1991 | 8389 | 69.2099 | | | | 219 | 2.11 |
| zhejiang | 1992 | 9824 | 98.215 | 63.9319 | 17.163 | 0.373 | 124 | 0.837 |

CHINA DATA

| Province Name | year | Fine for environmental accidents (million yuan) | # of pollution complaint letters governments received | # of pollution complaint letters governments responded | # of citizen-visits to government offices for environmental issues |
|---|---|---|---|---|---|
| tibet | 1989 | | | | |
| tibet | 1990 | | | | 9 |
| tibet | 1991 | | | | |
| tibet | 1992 | 0 | 6 | 2 | 4 |
| tibet | 1993 | 0 | 6 | 6 | 4 |
| tibet | 1994 | 0 | 2 | 2 | 0 |
| tibet | 1995 | 0 | 5 | 4 | 3 |
| xinjiang | 1987 | 0.02 | 321 | | 235 |
| xinjiang | 1988 | 0.01 | 309 | | 196 |
| xinjiang | 1989 | | 320 | | 176 |
| xinjiang | 1990 | | 237 | | 320 |
| xinjiang | 1991 | 0.02 | 273 | 229 | 286 |
| xinjiang | 1992 | 0.01 | 197 | 175 | 215 |
| xinjiang | 1993 | 0.086 | 210 | 157 | 393 |
| xinjiang | 1994 | 0.011 | 349 | 238 | 451 |
| xinjiang | 1995 | 0.115 | 490 | 469 | 679 |
| yunnan | 1987 | 0.07 | 538 | | 1146 |
| yunnan | 1988 | 0.2 | 418 | | 675 |
| yunnan | 1989 | 0.18 | 465 | | 722 |
| yunnan | 1990 | | 457 | | 1173 |
| yunnan | 1991 | 0.013 | 550 | 460 | 946 |
| yunnan | 1992 | 0.053 | 417 | 233 | 1387 |
| yunnan | 1993 | 0.075 | 581 | 508 | 1733 |
| yunnan | 1994 | 0.051 | 362 | 288 | 2000 |
| yunnan | 1995 | - | 341 | 303 | 1282 |
| zhejiang | 1987 | 0.79 | 5057 | | 7178 |
| zhejiang | 1988 | 0.73 | 3645 | | 5862 |
| zhejiang | 1989 | 0.51 | 3959 | | 5084 |
| zhejiang | 1990 | | 4157 | | 5001 |
| zhejiang | 1991 | 0.46 | 4054 | 3182 | 5197 |
| zhejiang | 1992 | 0.283 | 4127 | 3693 | 4039 |

| Province Name | year | Total Wastewater Discharge (million T) | Total Industrial Waste Water Discharge (million T) | Industrial wastewater discharge intensity (ton/10,000 yuan output) | Total Industrial Waste Water Treated (million T) | Of which: treated by city water treatment plant and centralized treatment facilities (million T) | Total Industrial Waste Water Meeting Discharge Standard (million T) | Industrial COD discharge (ton) |
|---|---|---|---|---|---|---|---|---|
| zhejiang | 1993 | 1717.48 | 1057.33 | 112.769 | 432.93 | 46.4099 | 715.69 | 279499.94 |
| zhejiang | 1994 | 1672 | 1007.03 | 93.6122 | 470.25 | 46.7299 | 690.6 | 258968.95 |
| zhejiang | 1995 | 1735.89 | 1028.06 | 83.7869 | 514.11 | 40.85 | 735.419 | 260162.45 |

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| Province Name | year | Industrial COD discharge intensity (ton/million yuan output) | waste gas emission (billion m3) | Waste gas emission intensity (m3/yuan output) | industrial waste gas emission (billion m3) | Industrial waste gas emission intensity (m3/yuan output) | SO2 discharge (ton) | SO2 discharge intensity (ton/million yuan output) |
|---|---|---|---|---|---|---|---|---|
| zhejiang | 1993 | 2.9809775 | 331.6 | 3.53664 | 287.8 | 3.0695 | 536058 | 5.71727 |
| zhejiang | 1994 | 2.4073437 | 351.399 | 3.26657 | 299.6 | 2.78504 | 543505 | 5.05235 |
| zhejiang | 1995 | 2.1203041 | 356.899 | 2.9087 | 310.8 | 2.53299 | 541439 | 4.41268 |

CHINA DATA

| Province Name | year | Industrial SO2 discharge | Industrial SO2 discharge intensity (ton/million yuan output) | Total smoke discharge (ton) | smoke discharge intensity (ton/million yuan output) | Industrial Smoke discharge | Industrial smoke discharge intensity (ton/million yuan output) | industrial smoke treatment( ton) |
|---|---|---|---|---|---|---|---|---|
| zhejiang | 1993 | 416569 | 4.44287 | 288814 | 3.08031 | 183556 | 1.95769 | 3335340 |
| zhejiang | 1994 | 411685 | 3.82697 | 264890 | 2.46238 | 162832 | 1.51366 | 3277753 |
| zhejiang | 1995 | 413229 | 3.36778 | 262337 | 2.13802 | 146682 | 1.19544 | 3279120 |

| Province Name | year | Industrial dust discharge (ton) | Industrial dust discharge intensity (ton/million yuan output) | industrial dust recovery (ton) | Output Value of Waste Recycling (million yuan) | Coal Consumption (million T) | No. of Enterprises in Sample of Envir Data | Total Value of Industrial Output from sampling enterprises (million yuan)(1990 constant price, an index of 1.684 is used converting 1980 price to 1990) |
|---|---|---|---|---|---|---|---|---|
| zhejiang | 1993 | 219193 | 2.33778 | 609036 | 281.742 | 19.67 | 3355 | 93761.1 |
| zhejiang | 1994 | 213283 | 1.98265 | 751869 | 319.358 | 20.48 | 3311 | 107574 |
| zhejiang | 1995 | 187149 | 1.52525 | 825086 | 393.08 | 22.96 | 3113 | 122700 |

| Province Name | year | # of Enterprises paying for pollution discharge | Total pollution discharge fee collected (total levy; million yuan) | levy on waste water (million yuan) | levy on waste gas(million yuan) | levy on sewage water (million yuan) | Total # of environmental accidents | Compensation for environmental accidents (million yuan) |
|---|---|---|---|---|---|---|---|---|
| zhejiang | 1993 | 13172 | 126.694 | 74.43 | 24.93 | 5.687 | 141 | 2.107 |
| zhejiang | 1994 | 17240 | 156.871 | 87.0789 | 32.7049 | 7.608 | 239 | 4.867 |
| zhejiang | 1995 | 22861 | 197.169 | 98.804 | 42.2019 | 8.156 | - | - |

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| Province Name | year | Fine for environmental accidents (million yuan) | # of pollution complaint letters governments received | # of pollution complaint letters governments responded | # of citizen-visits to government offices for environmental issues |
|---|---|---|---|---|---|
| zhejiang | 1993 | 0.269 | 4396 | 3914 | 4778 |
| zhejiang | 1994 | 0.916 | 4946 | 4690 | 5225 |
| zhejiang | 1995 | - | 4735 | 4510 | 6110 |